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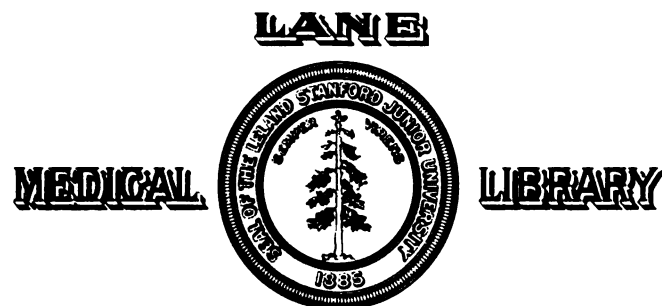


# ARTHROLOGY



**TOLDT**





Gift of:

Dr. Samuel G. Boyd

AMERICAN BANK NOTE CO. 1740







AN ATLAS  
OF  
HUMAN ANATOMY  
FOR STUDENTS AND PHYSICIANS

BY  
CARL TOLDT, M.D.  
PROFESSOR OF ANATOMY IN THE UNIVERSITY OF VIENNA

ASSISTED BY  
PROFESSOR ALOIS DALLA ROSA, M.D.

Translated from the Third German Edition and adapted to English and American and  
International Terminology

BY  
M. EDEN PAUL, M.D. BRUX., M.R.C.S., L.R.C.P.

SECOND SECTION  
C. ARTHROLOGY  
(FIGURES 378 TO 489 AND INDEX)



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# SYNDESMOLOGIA ARTHROLOGY

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## ERRATA IN PART II. OF TOLDT'S "ATLAS OF HUMAN ANATOMY."

Page 165, Fig. 381, left-hand column, first entry, for "**Cerebral dura mater**" read "**Cranial dura mater.**"

Page 217, Fig. 452, right-hand column, sixth entry, for "**Small sacrosciatic ligament**" read "**Small sacrosciatic foramen.**"

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## THE ARTICULATIONS IN GENERAL

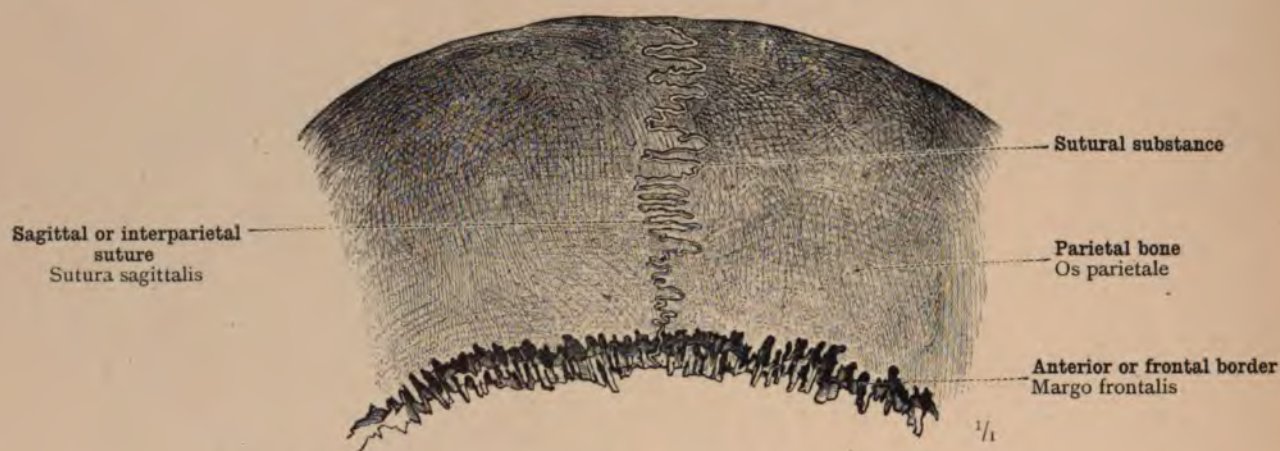


FIG. 378.—SUTURA SERRATA—SERRATED OR DENTATED SUTURE.

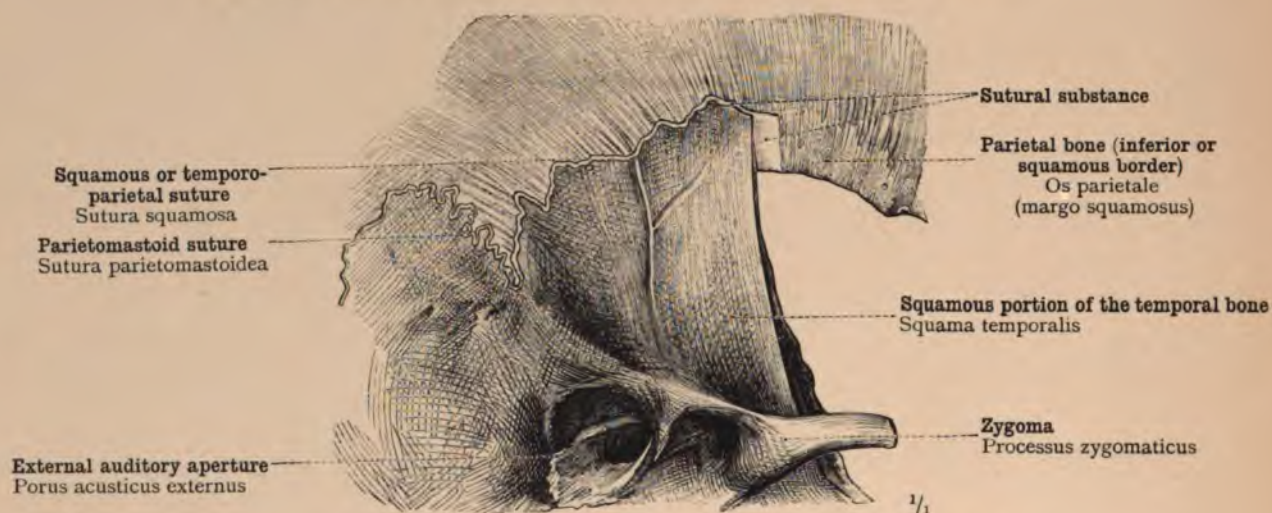


FIG. 379.—SUTURA SQUAMOSA—SQUAMOUS OR SCALY SUTURE.

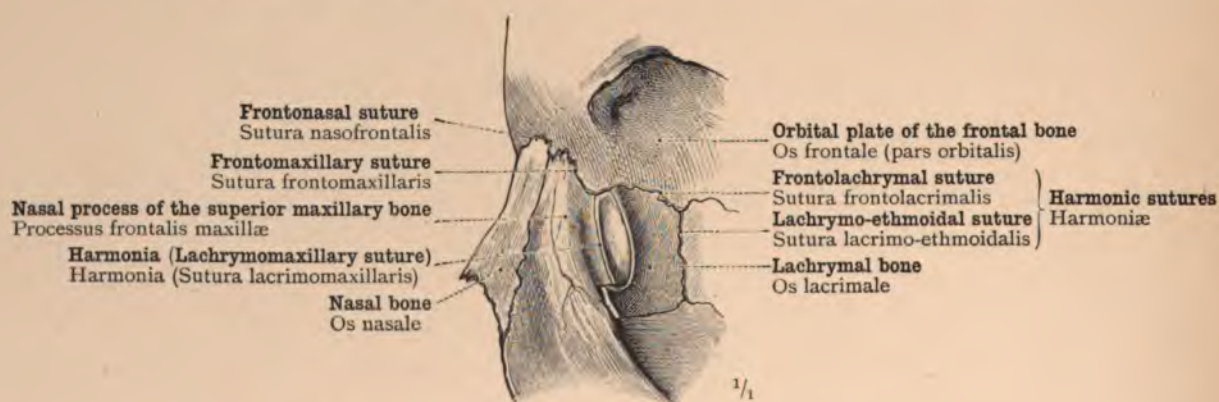


FIG. 380.—HARMONIA—HARMONIC SUTURE.

Synarthrosis, or Continuous Articulation.



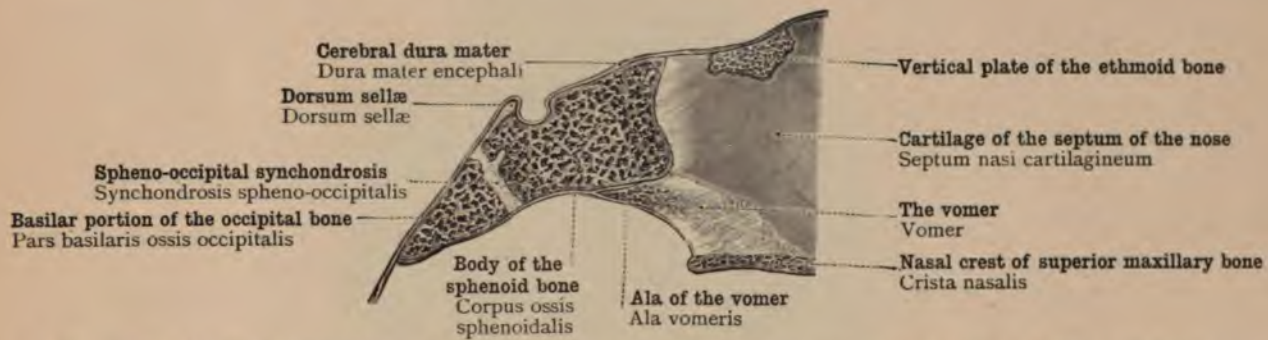


FIG. 381.—SYNCHONDROSIS. (THE SPHENO-OCIPITAL SYNCHONDROSIS OF A GIRL AT THE AGE OF TWO YEARS; MEDIAN SAGITTAL SECTION.)

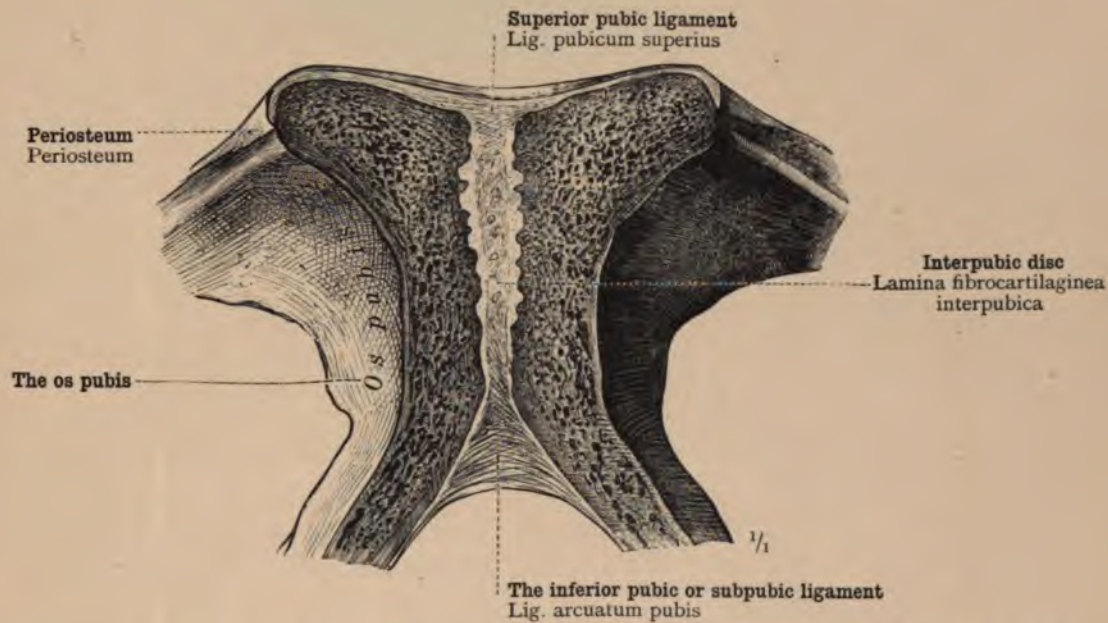


FIG. 382.—SYMPHYSES. (THE PUBIC SYMPHYSIS; FRONTAL SECTION, POSTERIOR PORTION.)



FIG. 383.—GOMPHOSIS.

Synarthrosis, or Continuous Articulation.

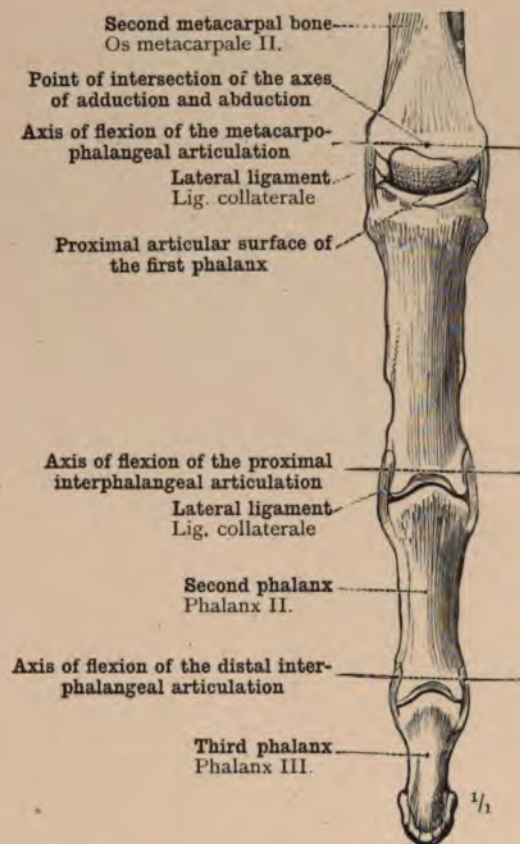


FIG. 384.—EXTENSION. POSTERIOR ASPECT.

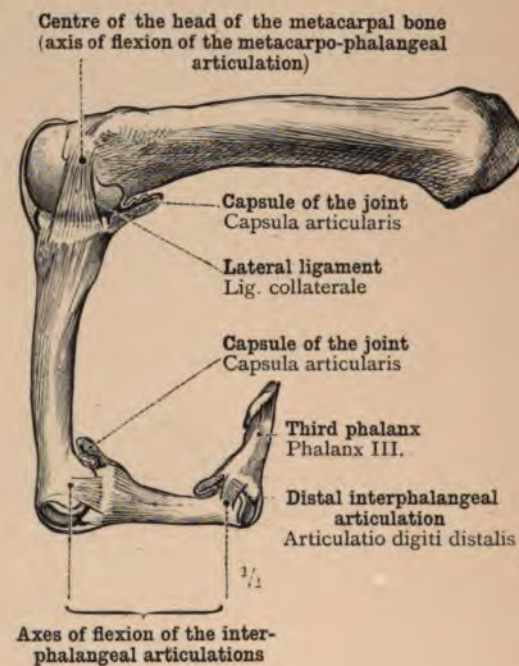


FIG. 385.—FLEXION. LATERAL ASPECT.

DIARTHROSIS (METACARPO-PHALANGEAL ARTICULATION).—GINGLYMUS, OR HINGE JOINT  
(ARTICULATIONS OF THE FINGERS).

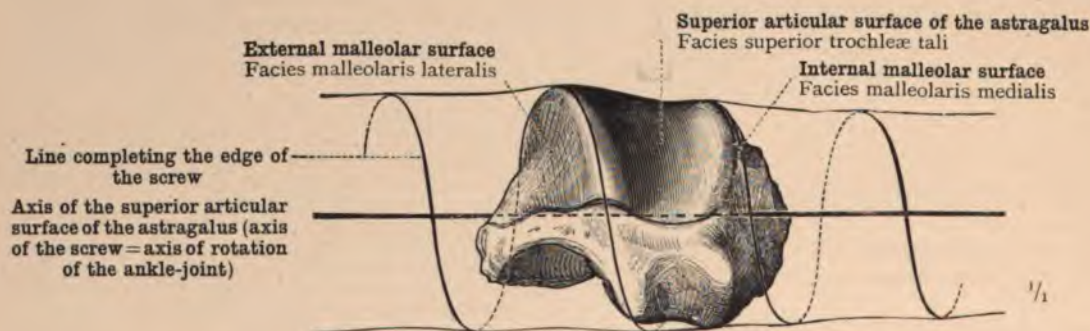


FIG. 386.—ARTICULATIO COCHLEARIS, COCHLEOID OR SCREW GINGLYMUS. (SUPERIOR ARTICULAR SURFACE OF THE LEFT ASTRAGALUS, SEEN FROM BEHIND, SHOWING THE SCREW FORM OF THE ANKLE-JOINT.

Diarthrosis, or Discontinuous Articulation—Articulatio simplex, simple joint.



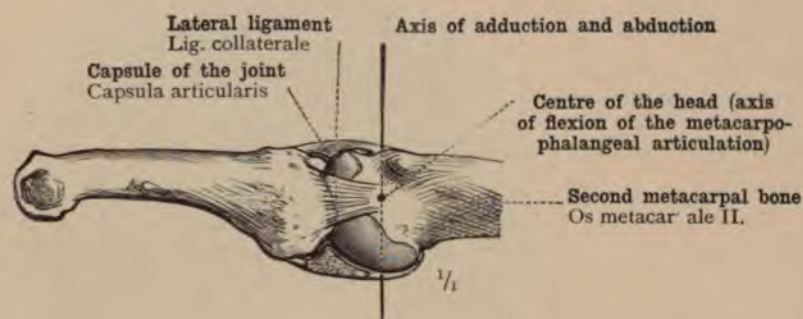


FIG. 387.—CONDYLARTHROSIS, OR CONDYLOID JOINT. (THE METACARPO-PHALANGEAL ARTICULATION OF THE INDEX-FINGER; LATERAL VIEW.)

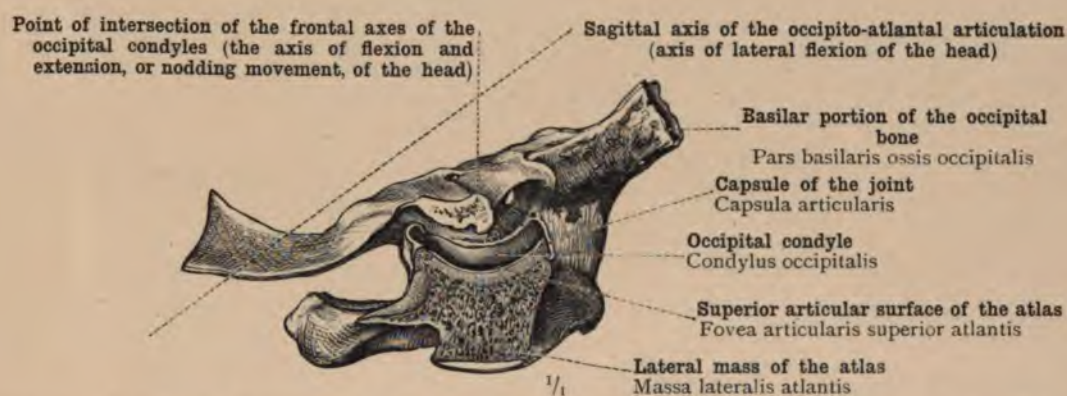


FIG. 388.—CONDYLARTHROSIS, OR CONDYLOID JOINT. (RIGHT OCCIPITO-ATLANTAL ARTICULATION; SEEN FROM THE OUTER SIDE.)

The outer half of the lateral mass of the atlas has been removed by a sagittal section passing through the joint.

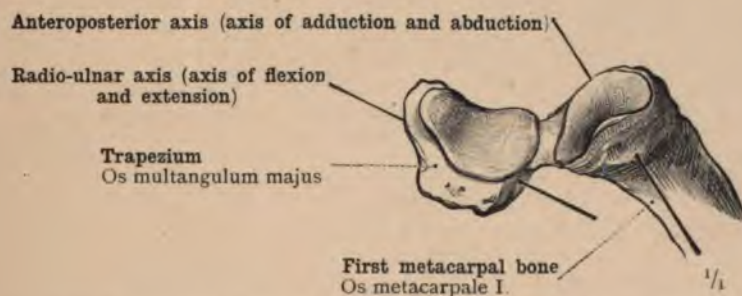


FIG. 389.—ARTICULATIO SELLARIS—SADDLE JOINT. (ARTICULATIO CARPOMETACARPEA POLLICIS—CARPOMETACARPAL JOINT OF THE THUMB.)

Diarthrosis, or Discontinuous Articulation—Articulatio simplex, simple joint.



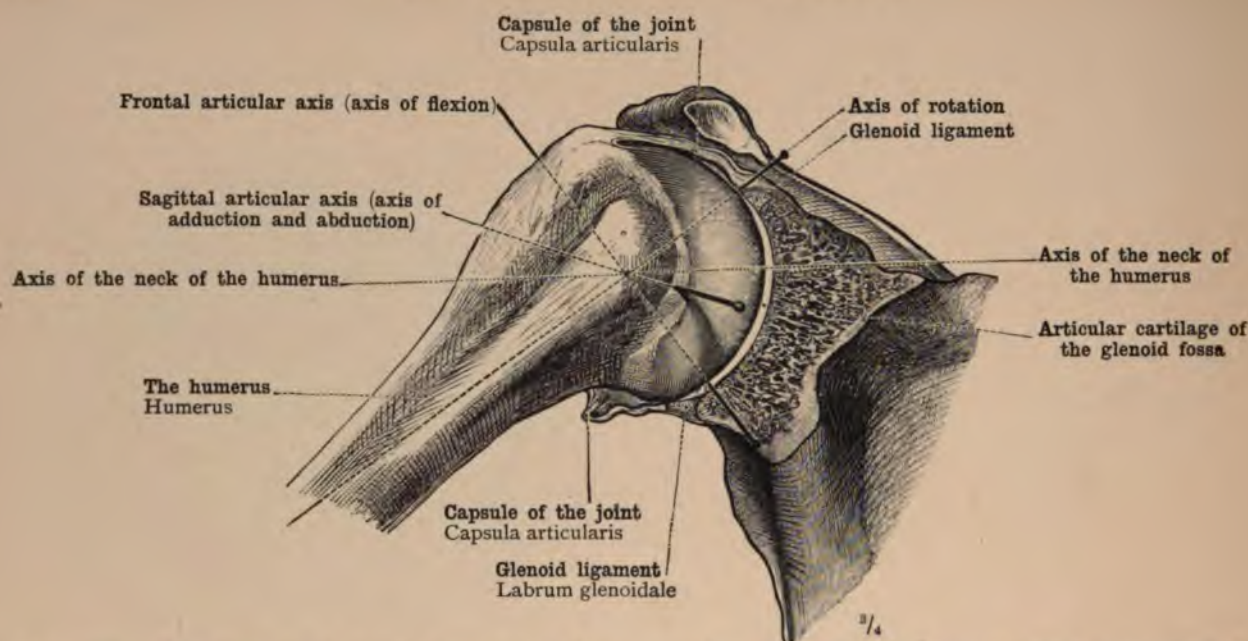


FIG. 390.—ENARTHROSIS,<sup>1</sup> OR ARTHRODIA; BALL-AND-SOCKET JOINT. (THE RIGHT SHOULDER-JOINT SEEN FROM BEFORE, THE ANTERIOR HALF OF THE GLENOID FOSSA AND OF THE CAPSULE OF THE JOINT HAVING BEEN REMOVED.)

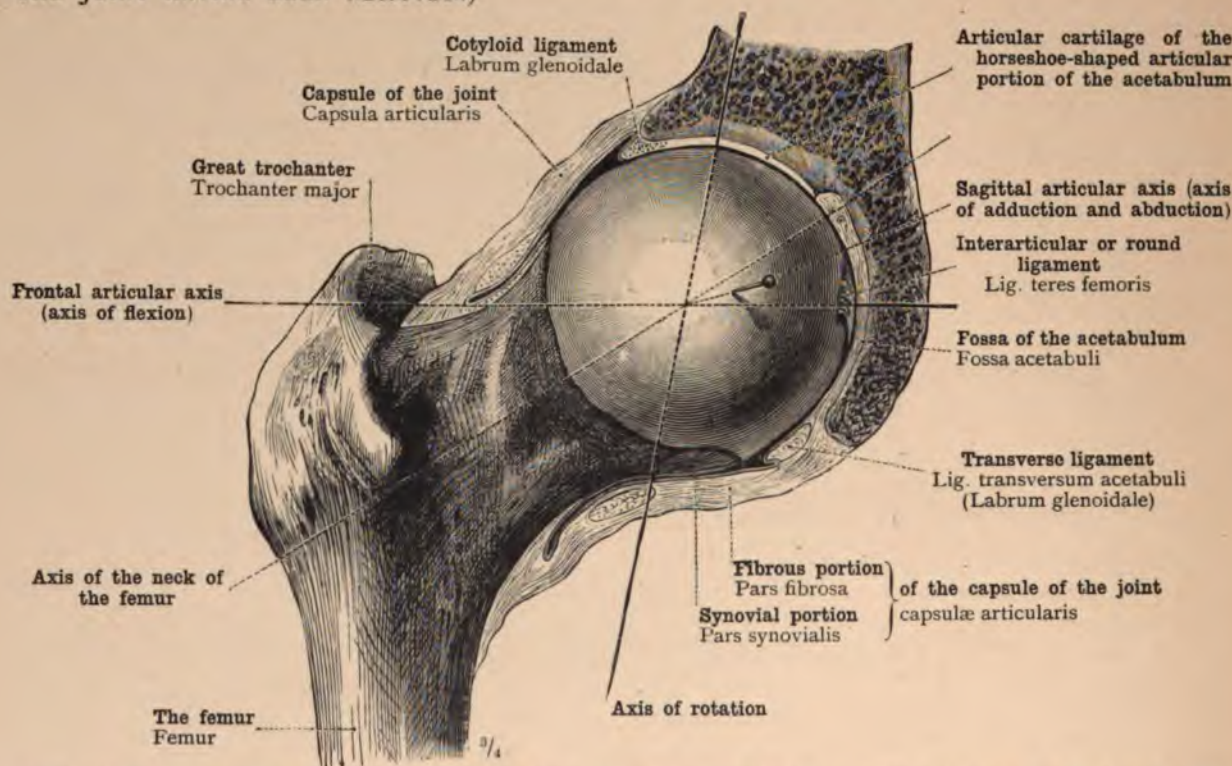


FIG. 391.—ENARTHROSIS,<sup>1</sup> OR ARTHRODIA; BALL-AND-SOCKET JOINT. (THE RIGHT HIP-JOINT SEEN FROM BEFORE, THE ANTERIOR HALF OF THE ACETABULUM AND OF THE CAPSULE OF THE JOINT HAVING BEEN REMOVED.)

<sup>1</sup> I have departed a little on this page from the author's terminology, which differs slightly from that in use in England. Both the hip and the shoulder joint are classed by him as examples of ARTICULATIO SPHÆROIDEA, *Kugelgelenk*—lit., "ball joint"; one of these, the shoulder-joint, in which the concave articular surface is considerably less than a hemisphere in extent, is called by him ARTHRODIA, *freies Gelenk*—lit., "free joint"; while the other, the hip-joint, in which the concave articular surface is considerably more than a hemisphere in extent, is called ENARTHROSIS, *Nussgelenk*—lit., "nut joint." English anatomists do not, as a rule, draw this distinction. The movements of the hip and the shoulder joint are identical in character, and the greater extent of the rigid portion of the enveloping surface in the one case than in the other has not been considered a difference sufficiently important to warrant a separation into two classes. Hence, in England the terms ENARTHROSIS and ARTHRODIA are applied indifferently to all ball-and-socket joints.—TR.

Diarthrosis, or Discontinuous Articulation—Articulatio simplex, simple joint; articulatio sphæroidea,<sup>1</sup> ball-and-socket joint.



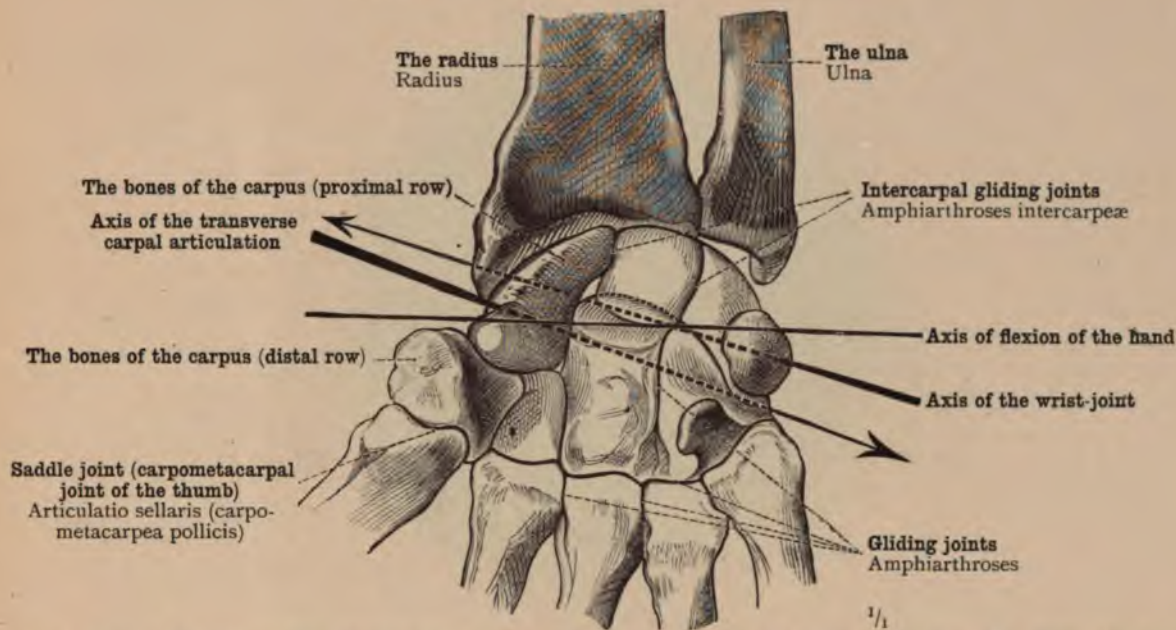


FIG. 392.—ARTICULATIO COMPOSITA, COMPOUND JOINTS (ARTICULATIONS OF THE HAND).—AMPHIARTHROSIS=ARTHRODIA OR GLIDING JOINT, AS SEEN IN THE INTERCARPAL, CARPO-METACARPAL, AND INTERMETACARPAL JOINT.

The arrows show the dorsal emergence of the axes of the wrist-joint and of the transverse carpal articulation respectively.

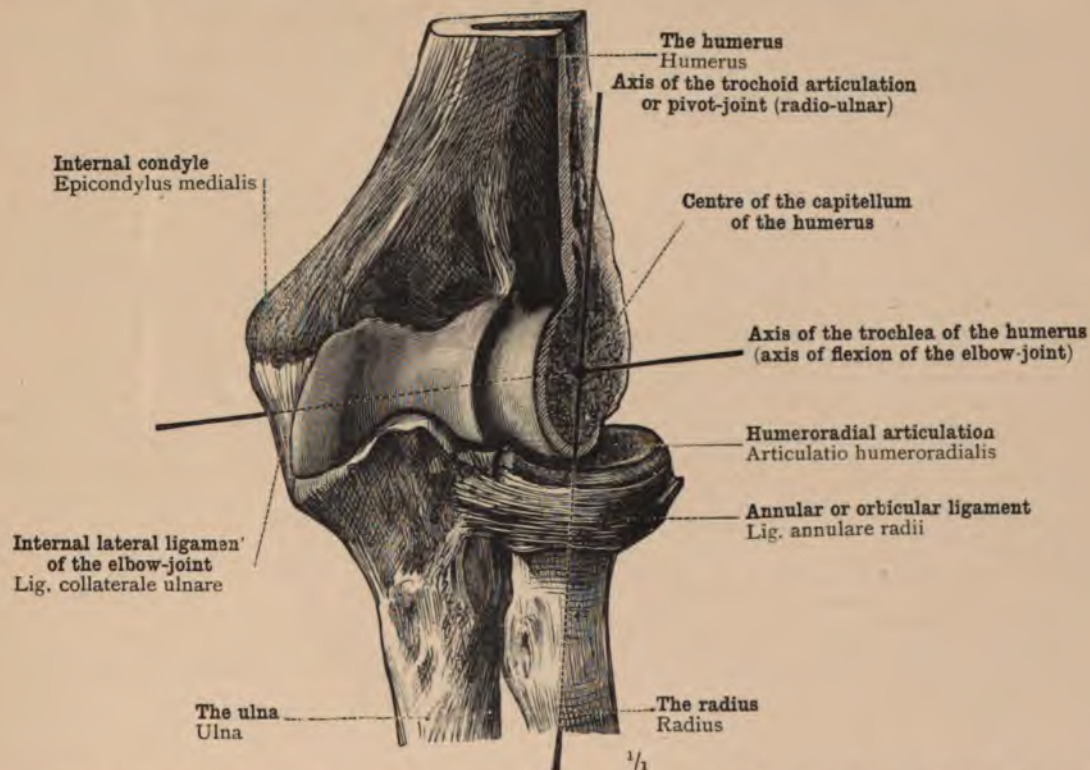


FIG. 393.—ARTICULATIO TROCHOIDEA, TROCHOID OR PIVOT JOINT.—GINGLYMUS, HINGE JOINT. (PALMAR ASPECT OF THE ELBOW-JOINT.)

The radial half of the capitellum of the humerus has been removed by a sagittal section passing through its centre of curvature.

Diarthrosis, or Discontinuous Articulation.

Amphiarthrosis, arthrodia or gliding joint—Articulatio composita, compound joint.



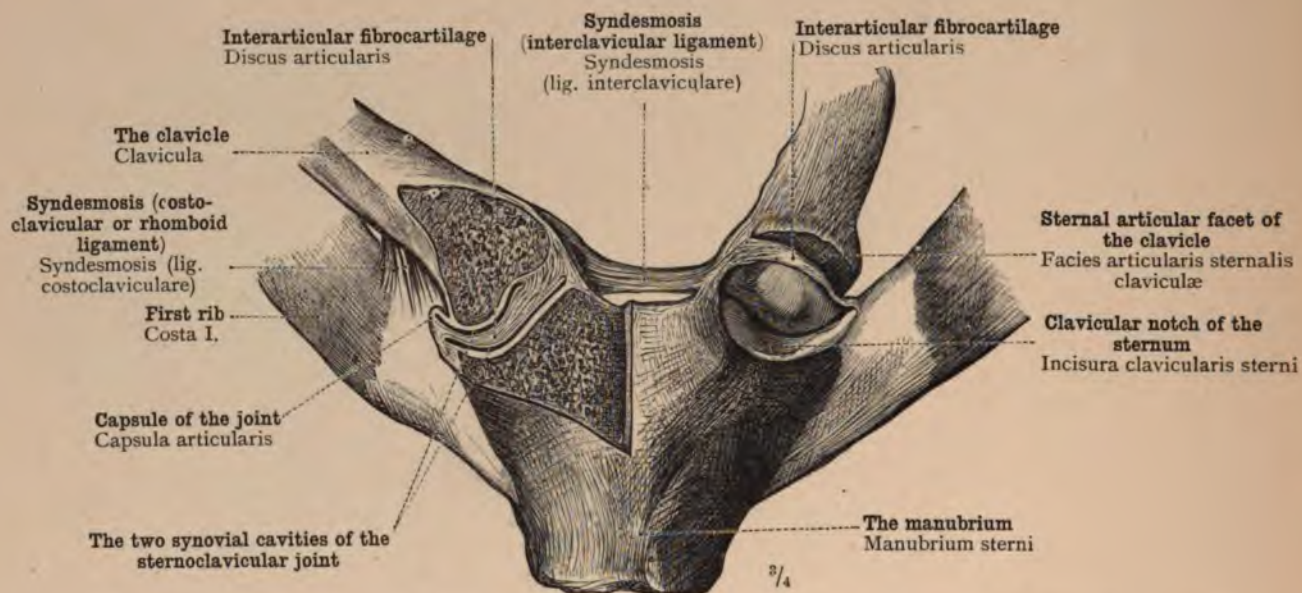


FIG. 394.—SYNDESMOSIS.—INTERARTICULAR FIBROCARILAGE. (THE STERNOCLAVICULAR ARTICULATION, ANTERIOR ASPECT.)

The right articulation is divided through the middle by a frontal section ; in the left, the front portion of the capsule has been removed, and the clavicle has been drawn backwards.

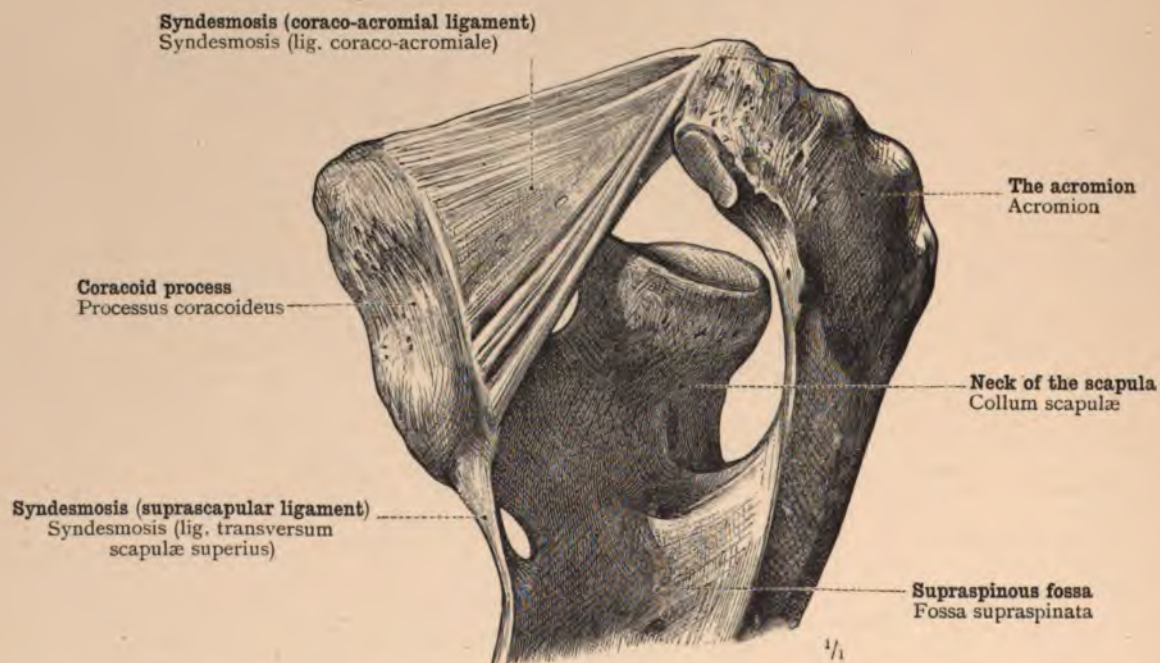


FIG. 395.—SYNDESMOSSES SCAPULÆ, PROPER LIGAMENTS OF THE SCAPULA ; SEEN FROM ABOVE.

Syndesmosis, fibrous or gamentous union—Discus articularis, interarticular fibrocartilage.

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THE ARTICULATIONS OF THE  
TRUNK

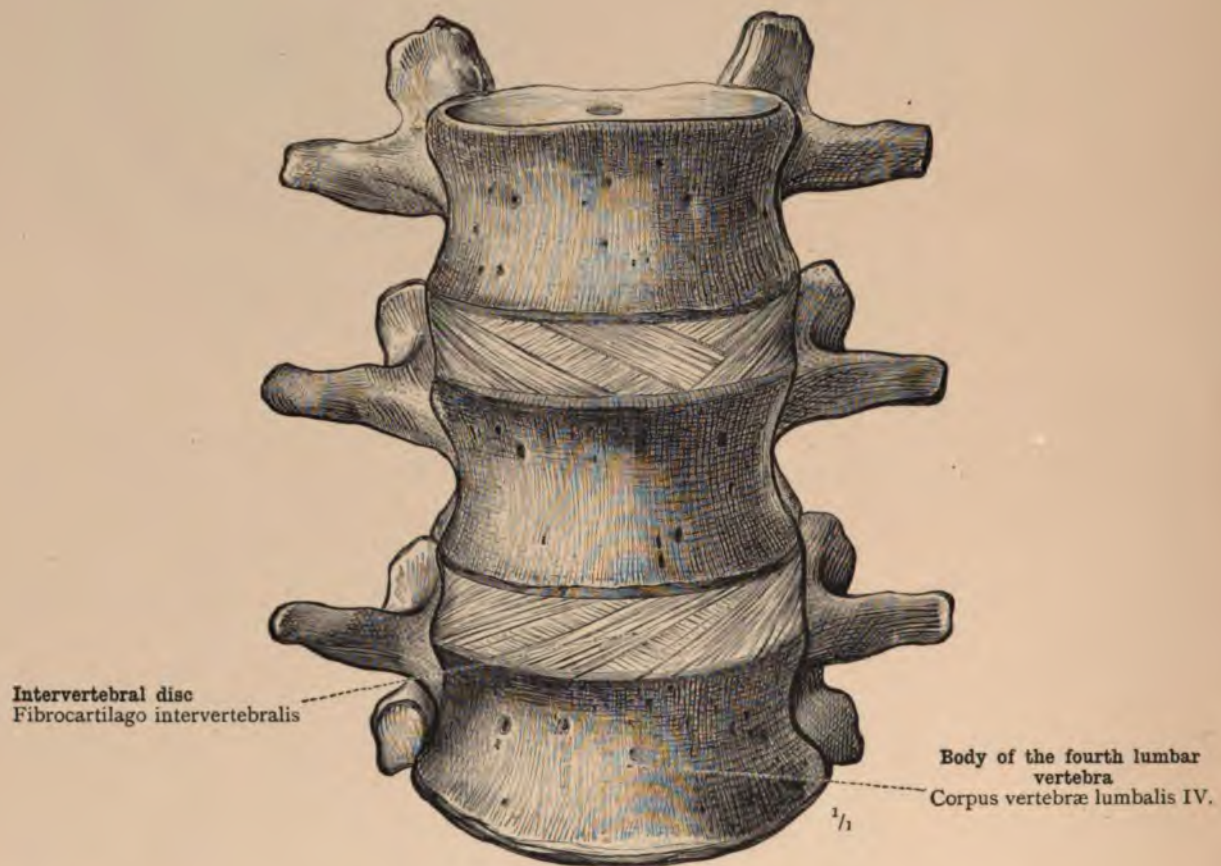


FIG. 396.—FIBROCARILAGINES INTERVERTEBRALES, INTERVERTEBRAL DISCS. (SECOND, THIRD, AND FOURTH LUMBAR VERTEBRÆ; SEEN FROM BEFORE.)

Ligamenta columnæ vertebralis—The ligaments of the vertebral column.



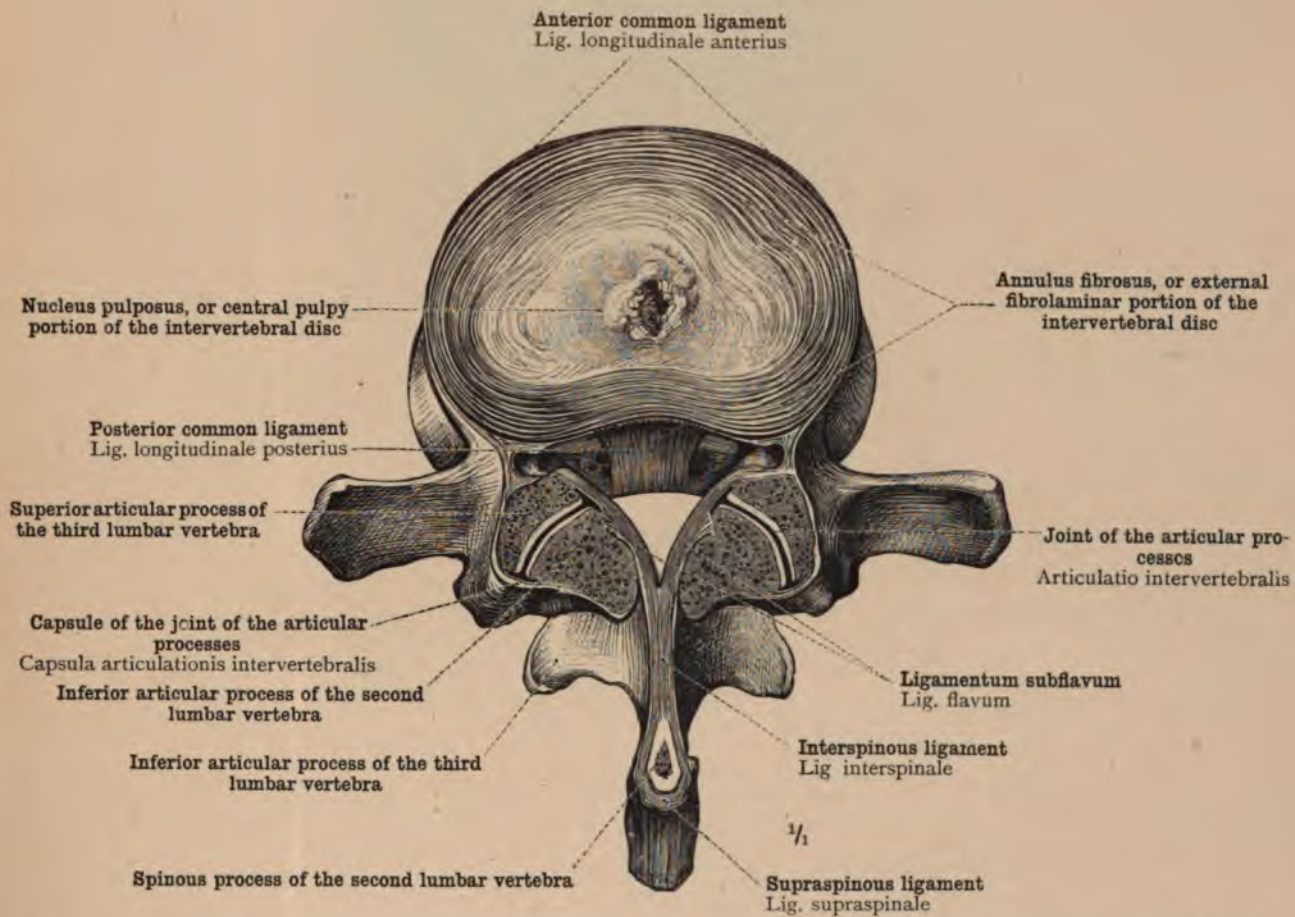


FIG. 397.—INTERVERTEBRAL DISC BETWEEN THE SECOND LUMBAR VERTEBRA AND THE THIRD.  
(LOWER HALF OF A HORIZONTAL SECTION.)

columnæ vertebralis—The ligaments of the vertebral column.

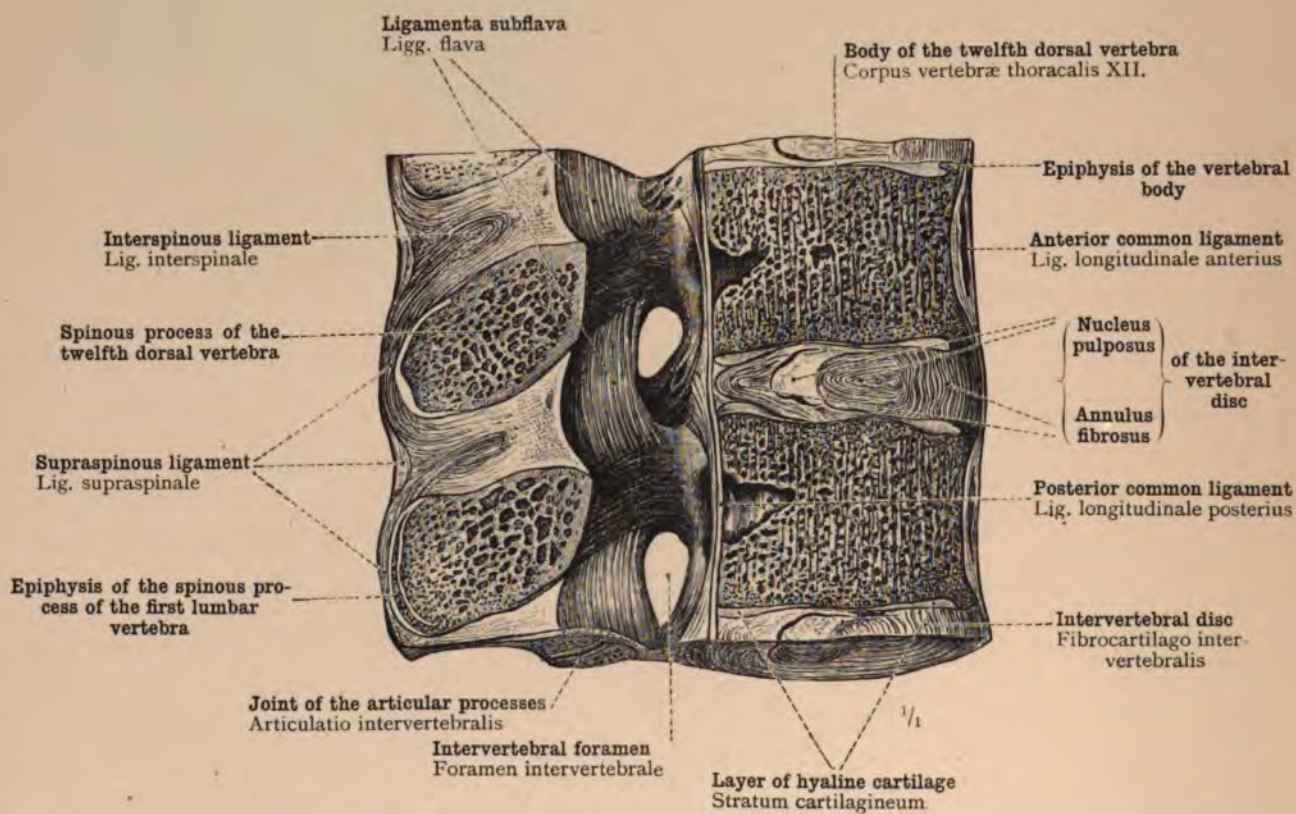


FIG. 398.—FIBROCARILAGINES INTERVERTEBRALES, INTERVERTEBRAL DISCS. LIGAMENTA FLAVA, OR SUBFLAVA. LIGAMENTA INTERSPINALIA, INTERSPINOUS LIGAMENTS. LIGAMENTUM SUPRASPINALE, SUPRASPINOUS LIGAMENT. (MEDIAN SECTION THROUGH THE TWELFTH DORSAL AND THE FIRST LUMBAR VERTEBRÆ, LEFT HALF.)

Ligamenta columnæ vertebralis—The ligaments of the vertebral column.



Capsule of the joint of the articular processes  
Capsula articulationis intervertebralis

Arch of the first dorsal vertebra  
Arcus vertebræ thoracalis I.

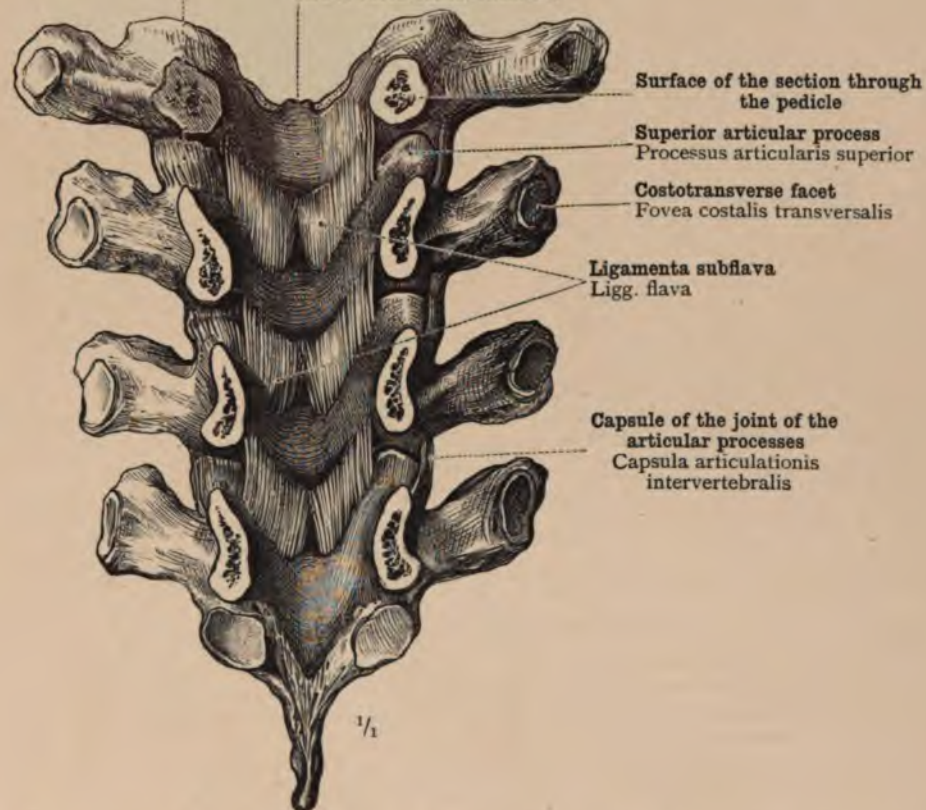


FIG. 399.—LIGAMENTA FLAVA, LIGAMENTA SUBFLAVA. ARTICULATIONES INTERVERTEBRALES, INTERVERTEBRAL ARTICULATIONS. OF THESE LATTER THE RIGHT ARE UNOPENED, THE LEFT OPENED. (THE ARCHES OF THE FIRST FOUR DORSAL VERTEBRÆ, SEPARATED FROM THE BODIES BY A FRONTAL SECTION. SEEN FROM BEFORE.)

Ligamenta columnæ vertebralis—The ligaments of the vertebral column.

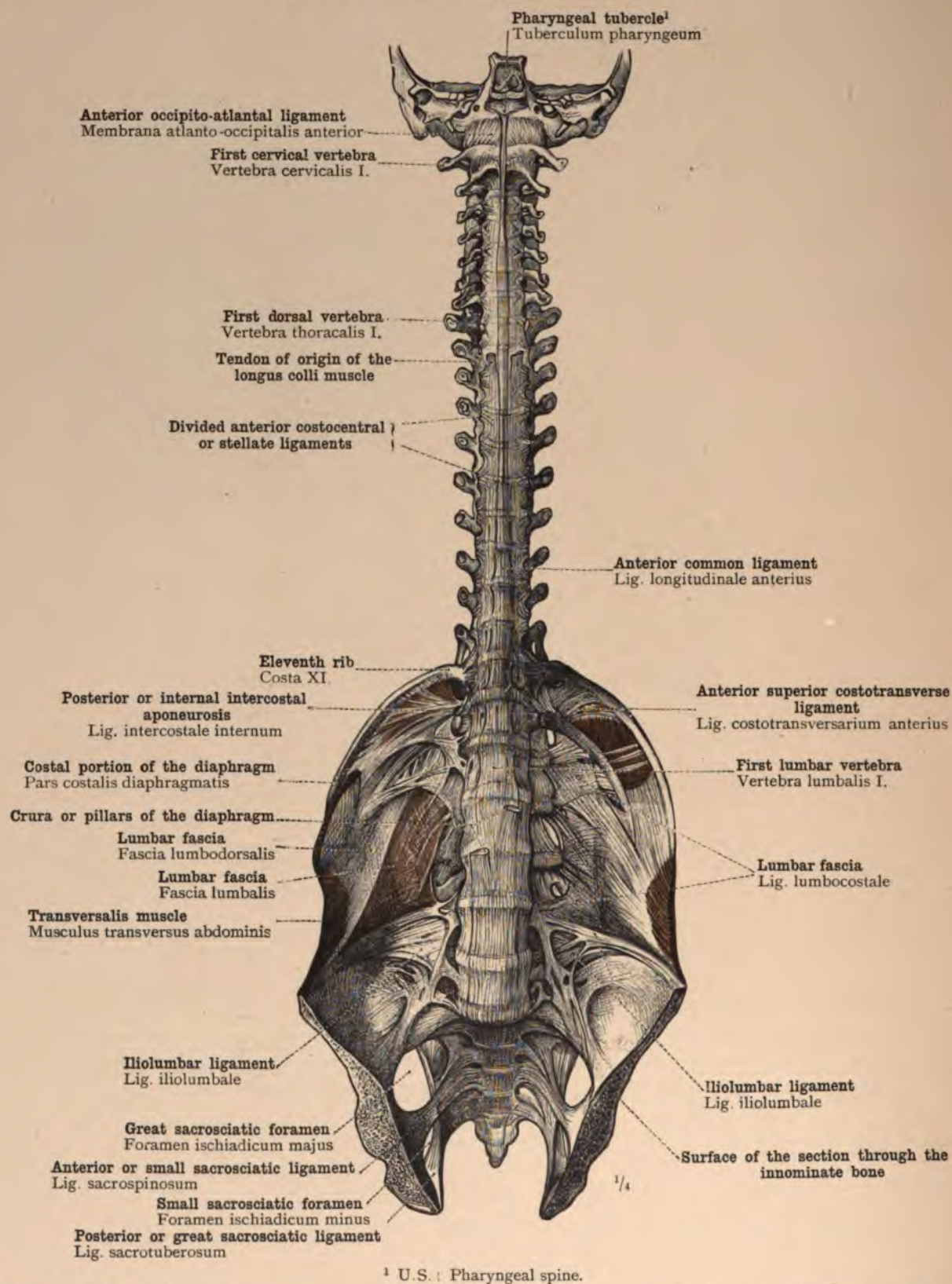


FIG. 400.—LIGAMENTUM LONGITUDINALE ANTERIUS, THE ANTERIOR COMMON LIGAMENT. LIGAMENTUM LUMBOCOSTALE, LUMBOCOSTAL LIGAMENT. (THE VENTRAL ASPECT OF THE VERTEBRAL COLUMN, THE ANTERIOR HALF OF THE BASE OF THE SKULL AND THE ANTERIOR HALF OF THE PELVIS HAVING BEEN REMOVED.)

Ligamenta columnæ vertebralis—The ligaments of the vertebral column.



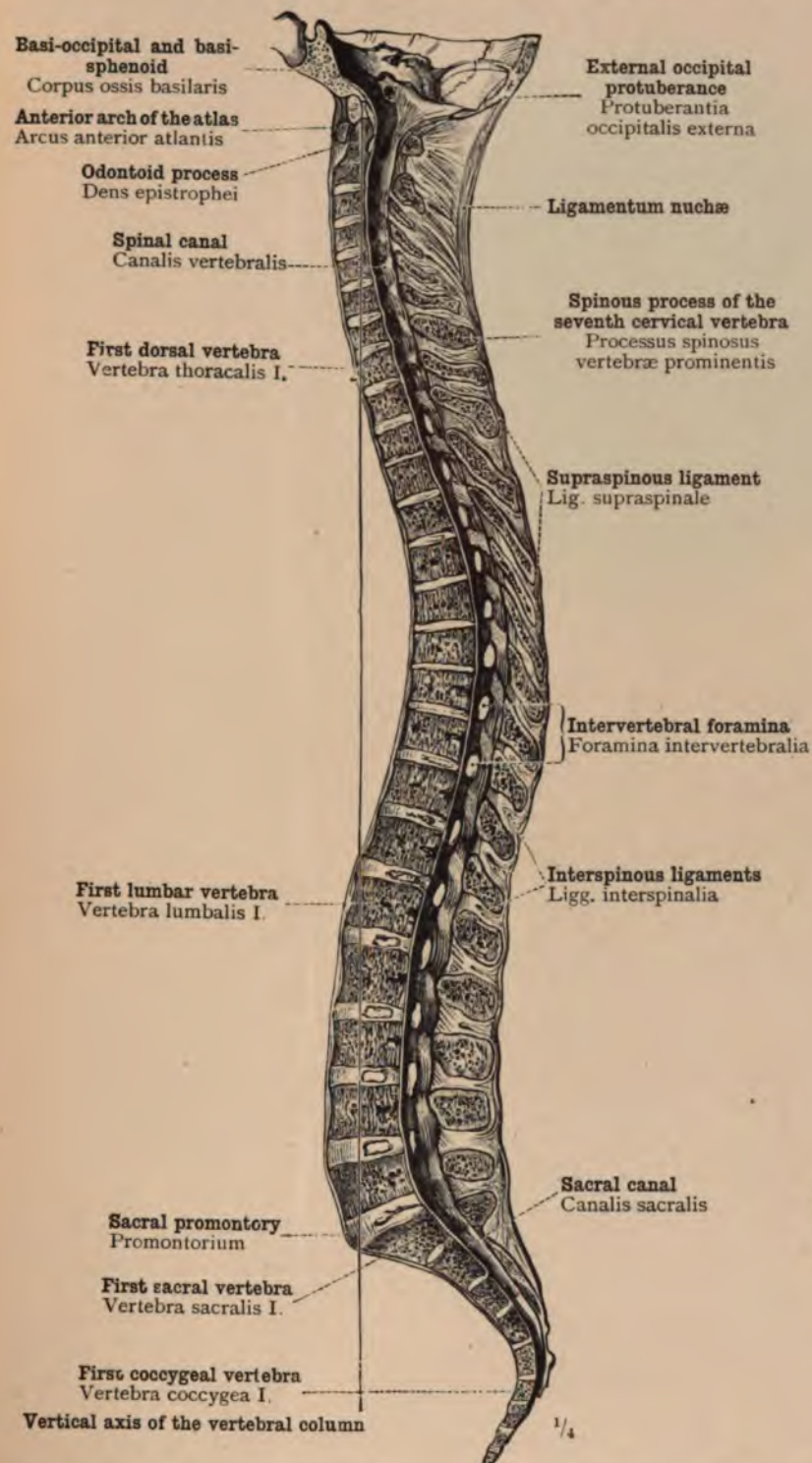


FIG. 401.—INTERVERTEBRAL DISCS, INTERSPINOUS LIGAMENTS, SUPRASPINOUS LIGAMENT, LIGAMENTUM NUCHÆ. SPINAL CANAL; INTERVERTEBRAL FORAMINA. VERTICAL AXIS OF THE VERTEBRAL COLUMN. (MEDIAN SECTION THROUGH THE VERTEBRAL COLUMN.)



FIG. 402.—POSTERIOR COMMON LIGAMENT AND ITS RELATION WITH THE POSTERIOR OCCIPITO-AXIAL AND THE DEEP POSTERIOR SACROCCYGEAL LIGAMENTS. (THE VERTEBRAL COLUMN WITH THE SPINAL CANAL OPENED BY THE REMOVAL OF THE NEURAL ARCHES; SEEN FROM BEHIND.)

<sup>1</sup> Macalister calls this ligament *ligamentum latum axiale*, the broad axial ligament.—Tr.

Ligamenta columnæ vertebralis—The ligaments of the vertebral column.



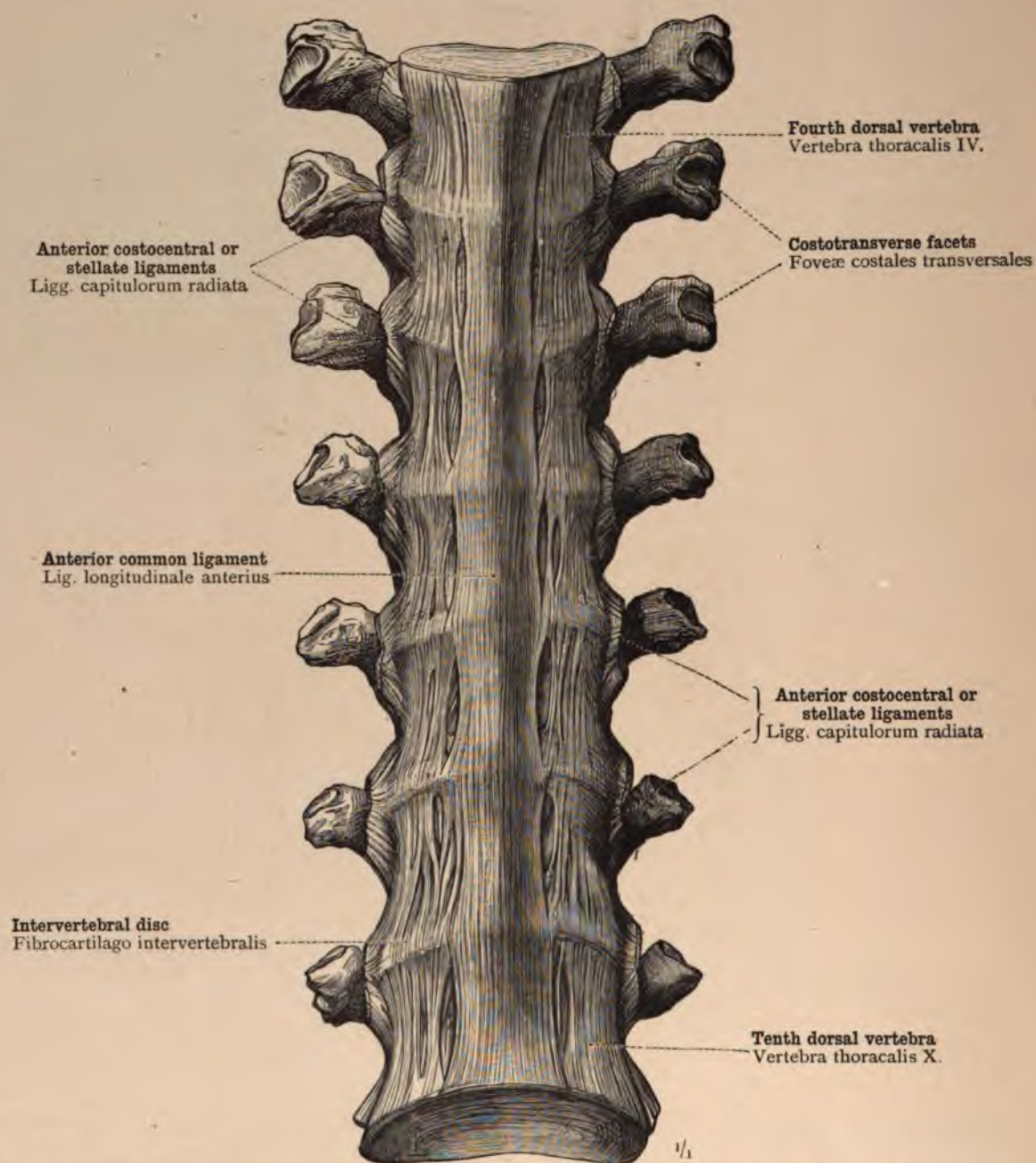


FIG. 403.—LIGAMENTUM LONGITUDINALE ANTERIUS, THE ANTERIOR COMMON LIGAMENT OF THE VERTEBRAL COLUMN. (THE FOURTH TO THE TENTH DORSAL VERTEBRÆ; SEEN FROM BEFORE.)

Ligamenta columnæ vertebralis—The ligaments of the vertebral column.



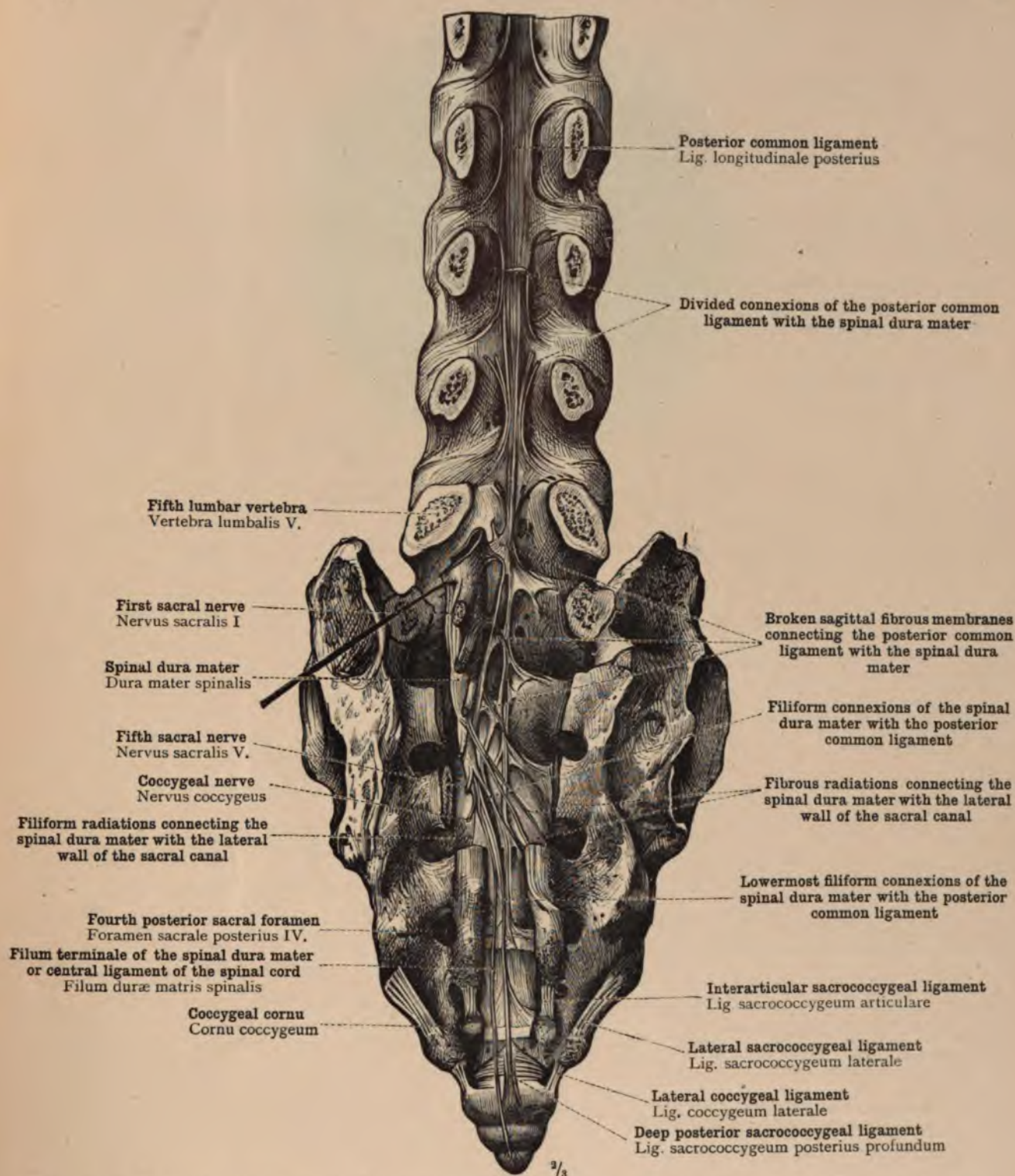


FIG. 404.—LUMBAR AND SACRAL PORTIONS OF THE POSTERIOR COMMON LIGAMENT, AND THE CONNEXIONS OF THIS LIGAMENT WITH THE SPINAL DURA MATER AND WITH THE DEEP POSTERIOR SACROCOCYGEAL LIGAMENT. (THE SACRUM AND THE LUMBAR PORTION OF THE VERTEBRAL COLUMN WITH THE SPINAL CANAL LAID OPEN FROM BEHIND.)

The sacral portion of the dura mater has been drawn to the left side.

Ligamenta columnæ vertebralis—The ligaments of the vertebral column.



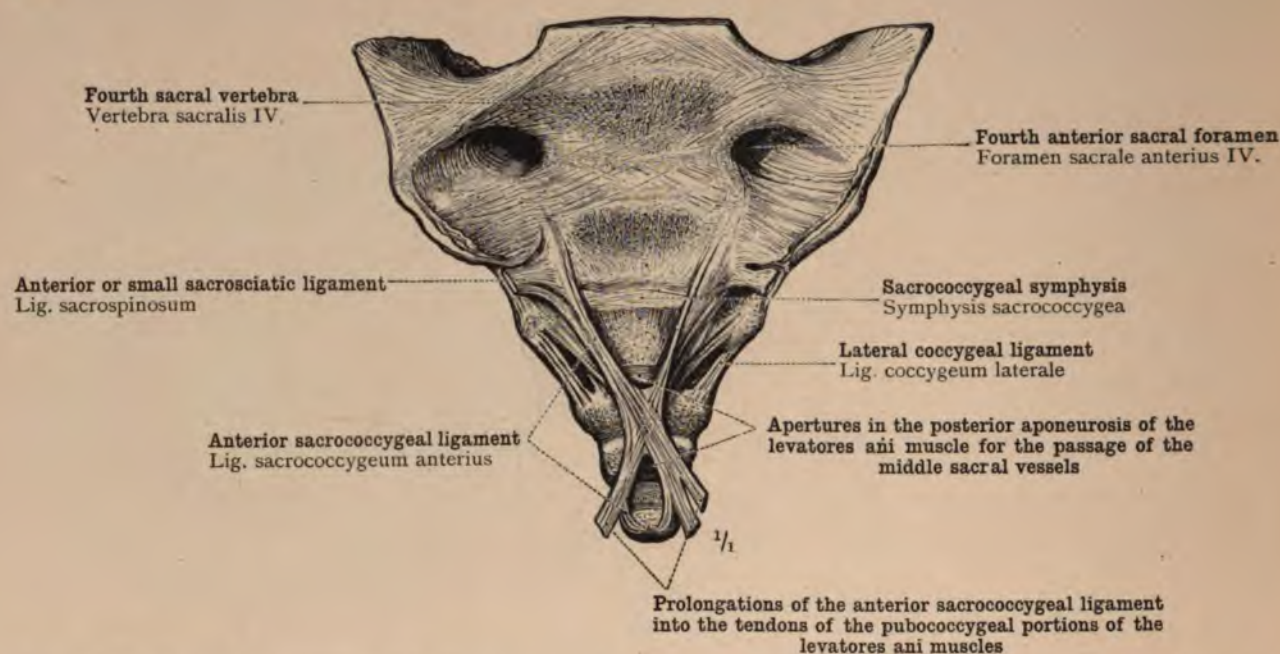


FIG. 405.—THE LIGAMENTS CONNECTING THE ANTERIOR SURFACES OF THE SACRUM AND COCCYX : THE ANTERIOR AND THE LATERAL SACROCCYGEAL LIGAMENTS.

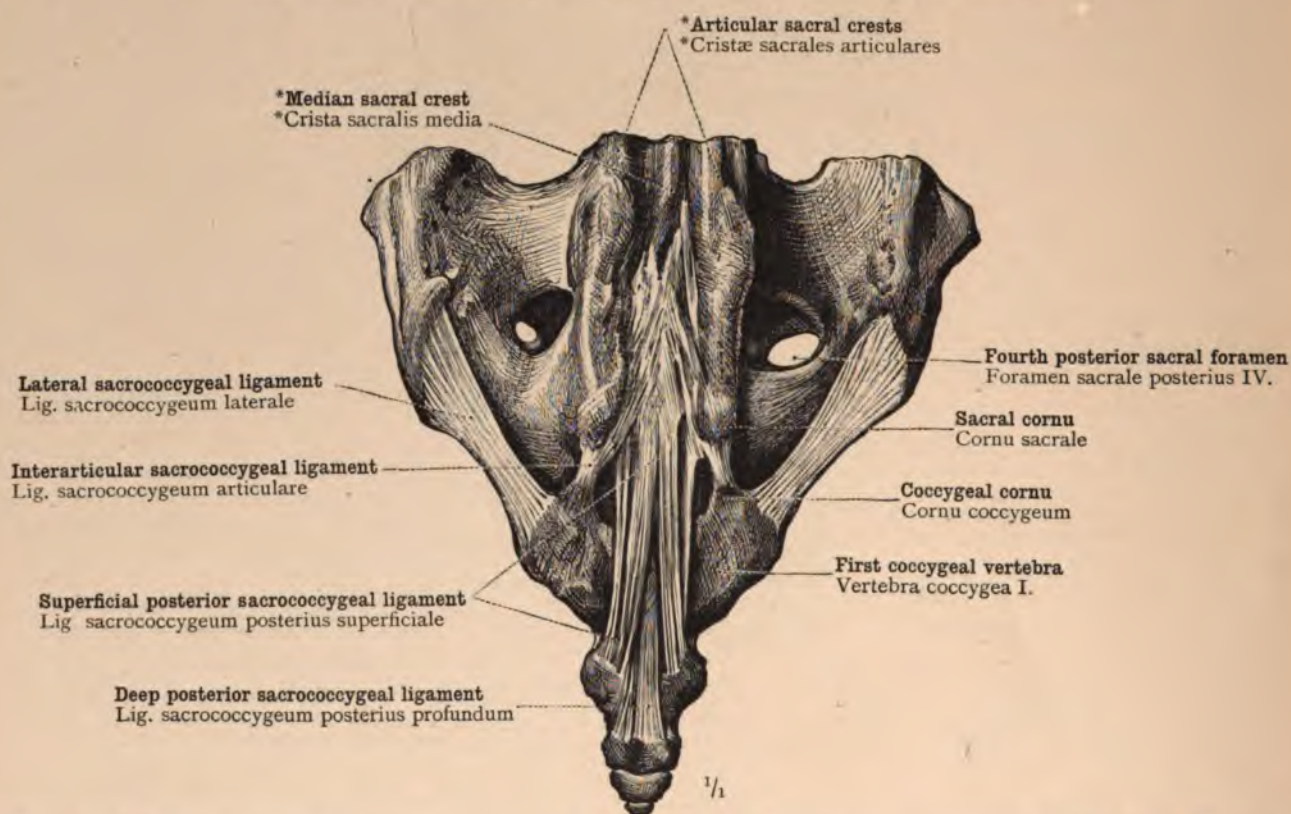


FIG. 406.—THE LIGAMENTS CONNECTING THE POSTERIOR SURFACES OF THE SACRUM AND COCCYX : THE SUPERFICIAL AND DEEP POSTERIOR SACROCCYGEAL LIGAMENTS, AND THE INTERARTICULAR AND LATERAL SACROCCYGEAL LIGAMENTS.

THE COCCYX WITH THE TWO LAST SACRAL VERTEBRÆ.

Ligamenta columnæ vertebralis—The ligaments of the vertebral column.



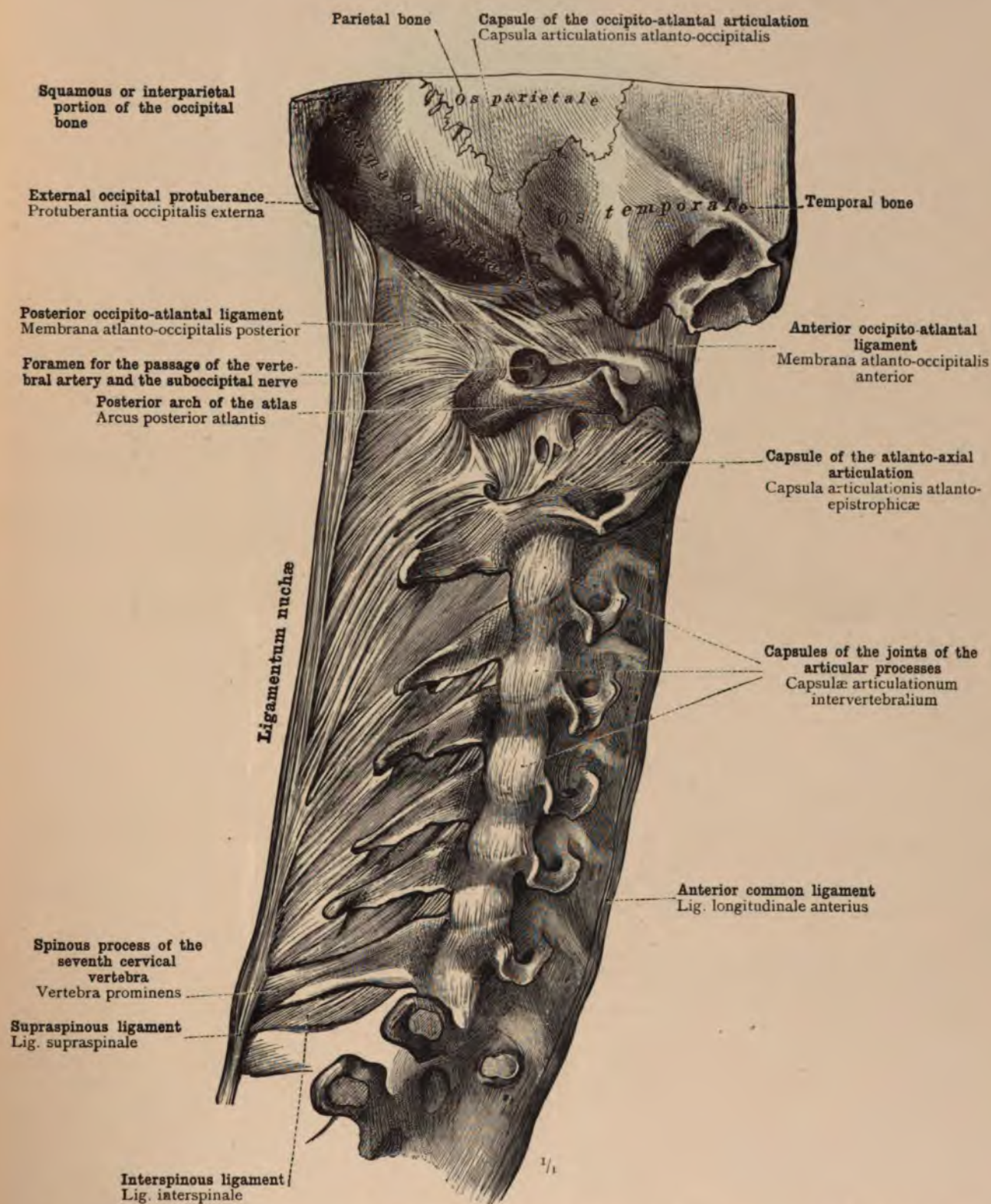


FIG. 407.—LIGAMENTUM NUCHÆ. (THE CERVICAL PORTION OF THE VERTEBRAL COLUMN AND THE POSTERIOR PORTION OF THE CRANIUM; SEEN FROM THE RIGHT SIDE.)

Ligamenta columnæ vertebralis—The ligaments of the vertebral column.



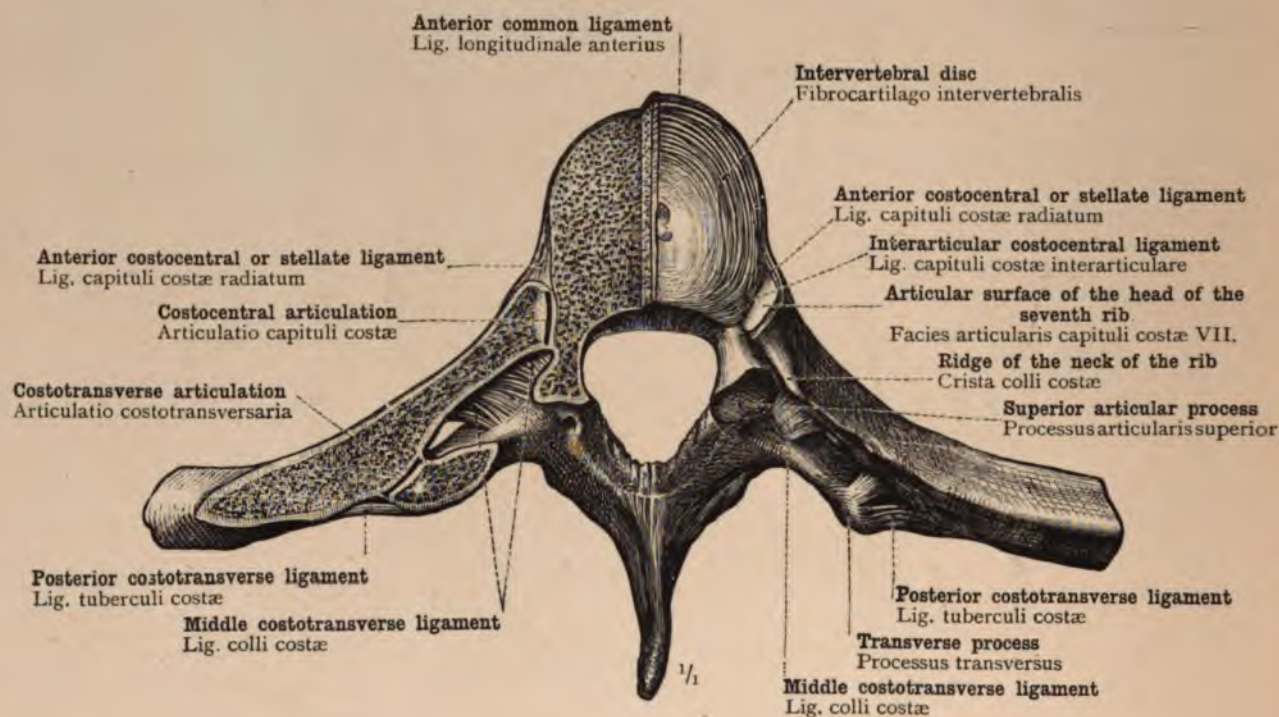
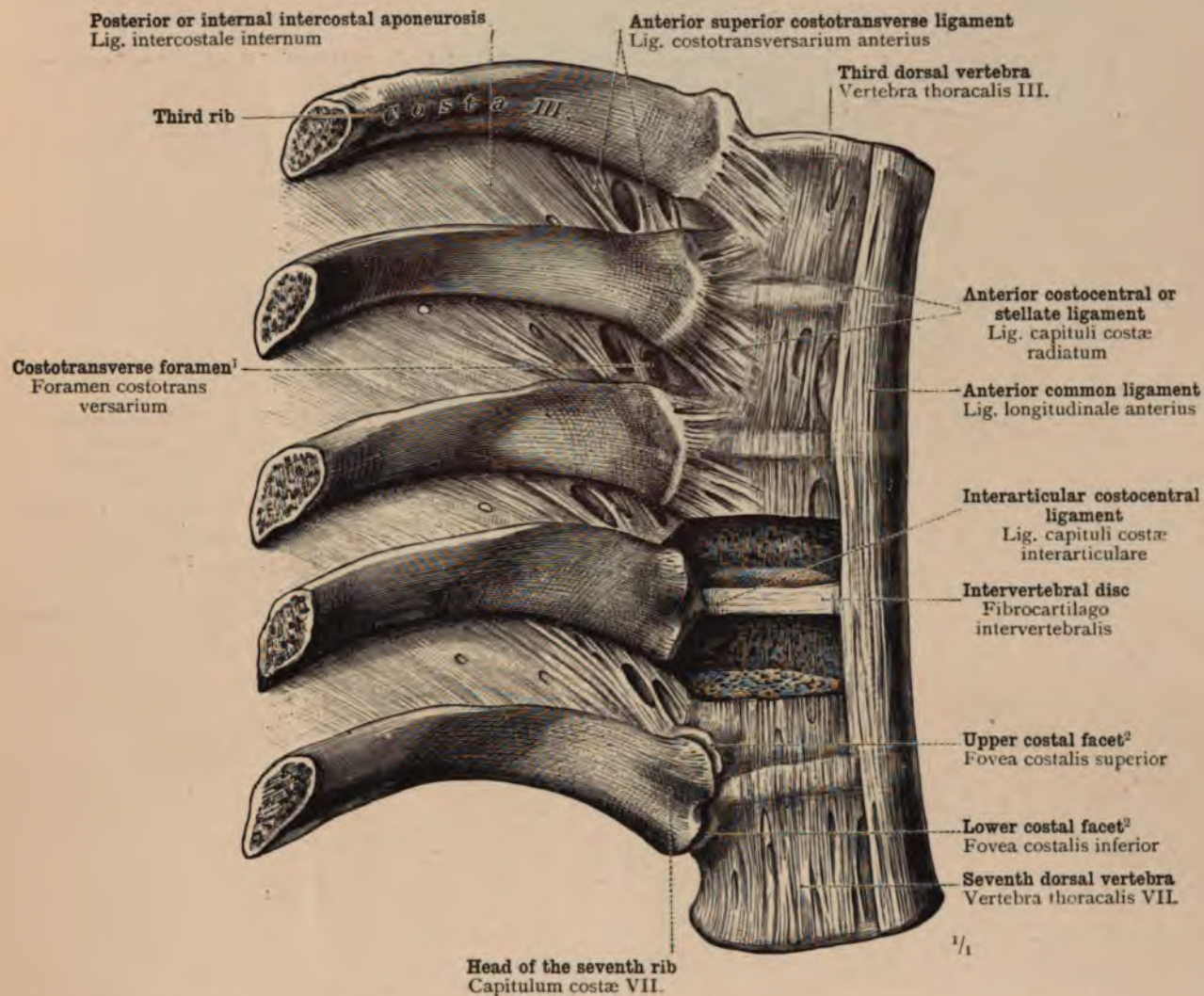


FIG. 408.—ARTICULATIONES CAPITULORUM ET COSTOTRANSVERSARIÆ, THE COSTOCENTRAL AND COSTOTRANSVERSE ARTICULATIONS: LIGAMENTUM CAPITULI COSTÆ INTERARTICULARE, THE INTERARTICULAR COSTOCENTRAL LIGAMENT; LIGAMENTUM COLLI COSTÆ ET LIGAMENTUM TUBERCULI COSTÆ, THE MIDDLE AND POSTERIOR COSTOTRANSVERSE LIGAMENTS. (THE SEVENTH DORSAL VERTEBRA WITH THE VERTEBRAL EXTREMITIES OF THE SEVENTH PAIR OF RIBS; SEEN FROM ABOVE.)

On the left side the costocentral and costotransverse articulations have been opened by a horizontal section through the rib and the vertebral body; on the right side the section passes through the intervertebral disc on a plane just above the attachment of the interarticular costocentral ligament to the ridge between the two articular facets on the vertebral extremity of the rib.

Articulationes costovertebrales—Costovertebral articulations.





<sup>1</sup> This term, *costotransverse foramen*, is also used by English anatomists to denote the foramina in the transverse processes of the cervical vertebrae for the transmission of the vertebral artery.—Tr.

<sup>2</sup> These are upper and lower costal facets respectively in relation to the articular surface of the head of the rib; but, strictly speaking, what is here called "upper costal facet" is the lower costal facet of the sixth dorsal vertebra; while what is here called "lower costal facet" is the upper costal facet of the seventh dorsal vertebra.—Tr.

FIG. 409.—COSTOCENTRAL AND COSTOTRANSVERSE ARTICULATIONS: ANTERIOR COSTOCENTRAL OR STELLATE LIGAMENT; INTERARTICULAR COSTOCENTRAL LIGAMENT; ANTERIOR SUPERIOR COSTOTRANSVERSE LIGAMENT; AND COSTOTRANSVERSE FORAMINA. POSTERIOR OR INTERNAL INTERCOSTAL APONEUROSSES. (THE THIRD TO THE SEVENTH DORSAL VERTEBRÆ WITH THE VERTEBRAL EXTREMITIES OF THE THIRD TO THE SEVENTH RIGHT RIBS; SEEN FROM THE RIGHT AND FROM BEFORE.)

The third, fourth, and fifth costocentral articulations are unopened; the sixth and the seventh have been opened from before. In the sixth articulation, by the partial removal of the bodies of the fifth and sixth dorsal vertebrae, the upper and lower surfaces of the intervertebral disc have been exposed, and the attachment of the disc to the ridge between the two articular facets on the head of the rib has been demonstrated.

Articulationes costovertebrales—Costovertebral articulations.



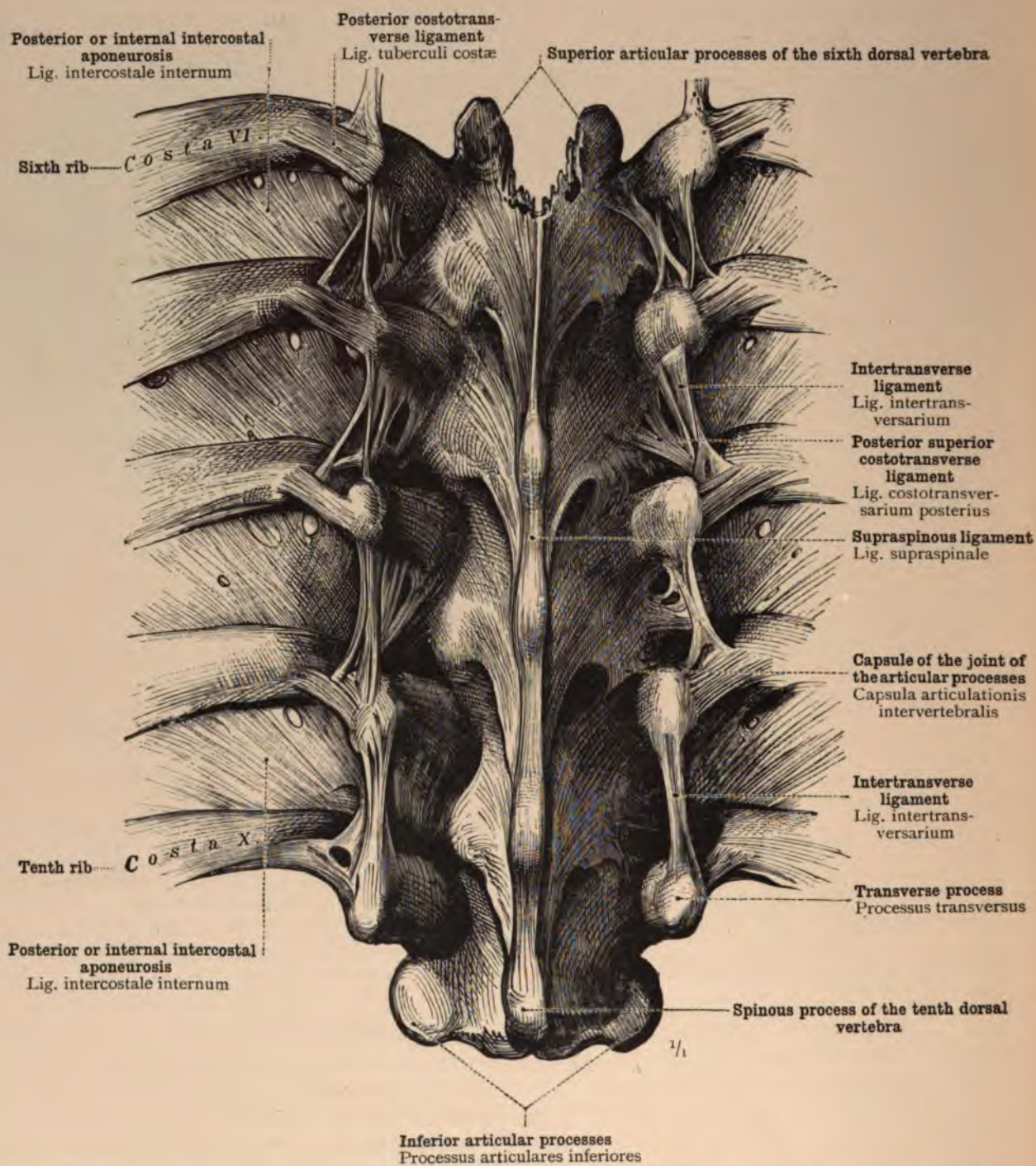
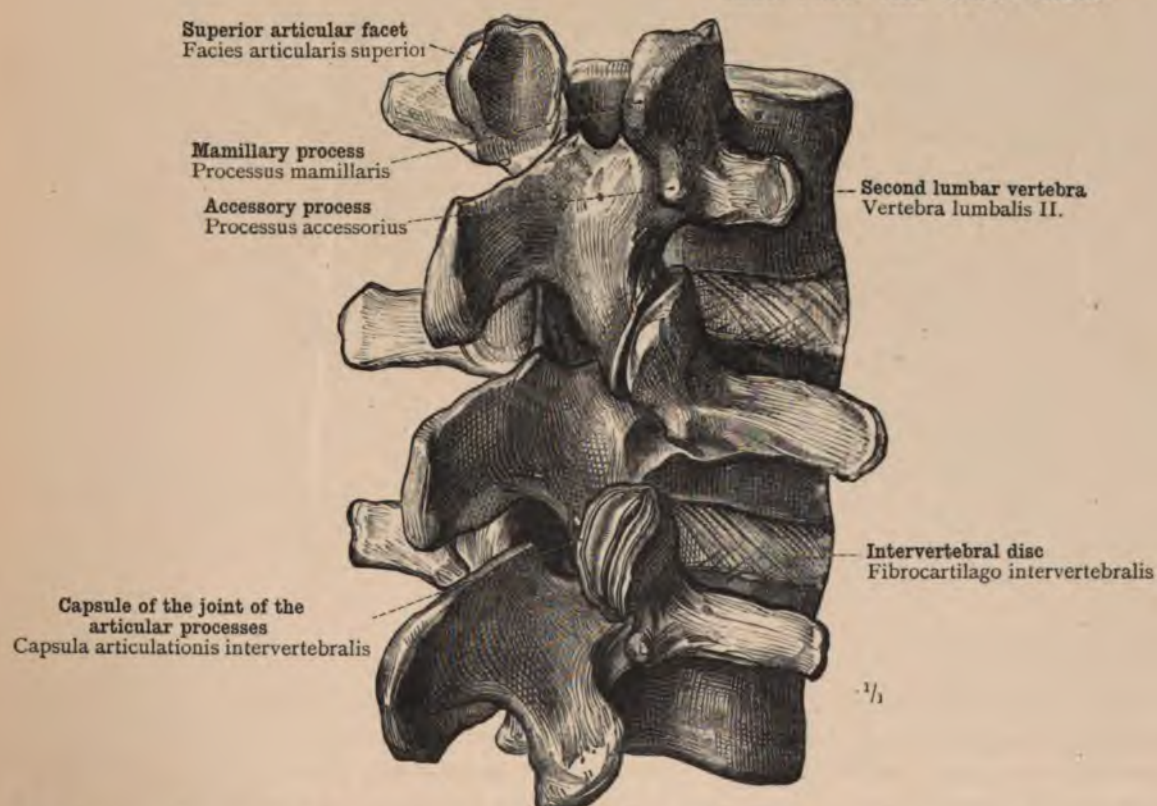
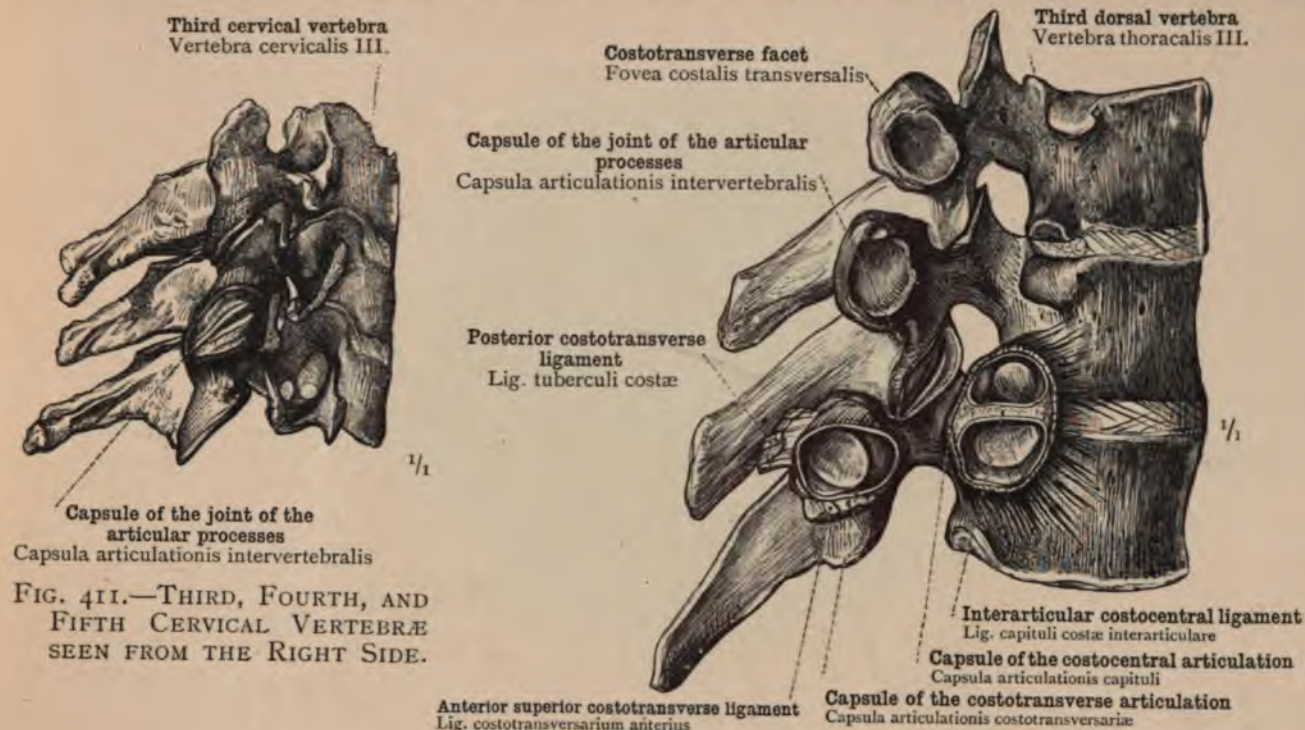


FIG. 410.—THE LIGAMENTS CONNECTING THE DORSAL VERTEBRÆ WITH THE RIBS POSTERIORLY: POSTERIOR AND POSTERIOR SUPERIOR COSTOTRANSVERSE LIGAMENTS; INTERTRANSVERSE LIGAMENTS; POSTERIOR OR INTERNAL INTERCOSTAL APONEUROSES; SUPRASPINOUS LIGAMENT. (SIXTH TO TENTH DORSAL VERTEBRÆ WITH THE VERTEBRAL EXTREMITIES OF THE SIXTH TO TENTH RIBS.)

Articulationes costovertebrales—Costovertebral articulations.





THE DIRECTION OF THE ARTICULAR SURFACES AND THE CONNEXIONS OF THE CAPSULES OF THE JOINTS OF THE ARTICULAR PROCESSES IN THE CERVICAL, DORSAL, AND LUMBAR VERTEBRÆ RESPECTIVELY.

The Synovial Articulations of the Vertebral Column.



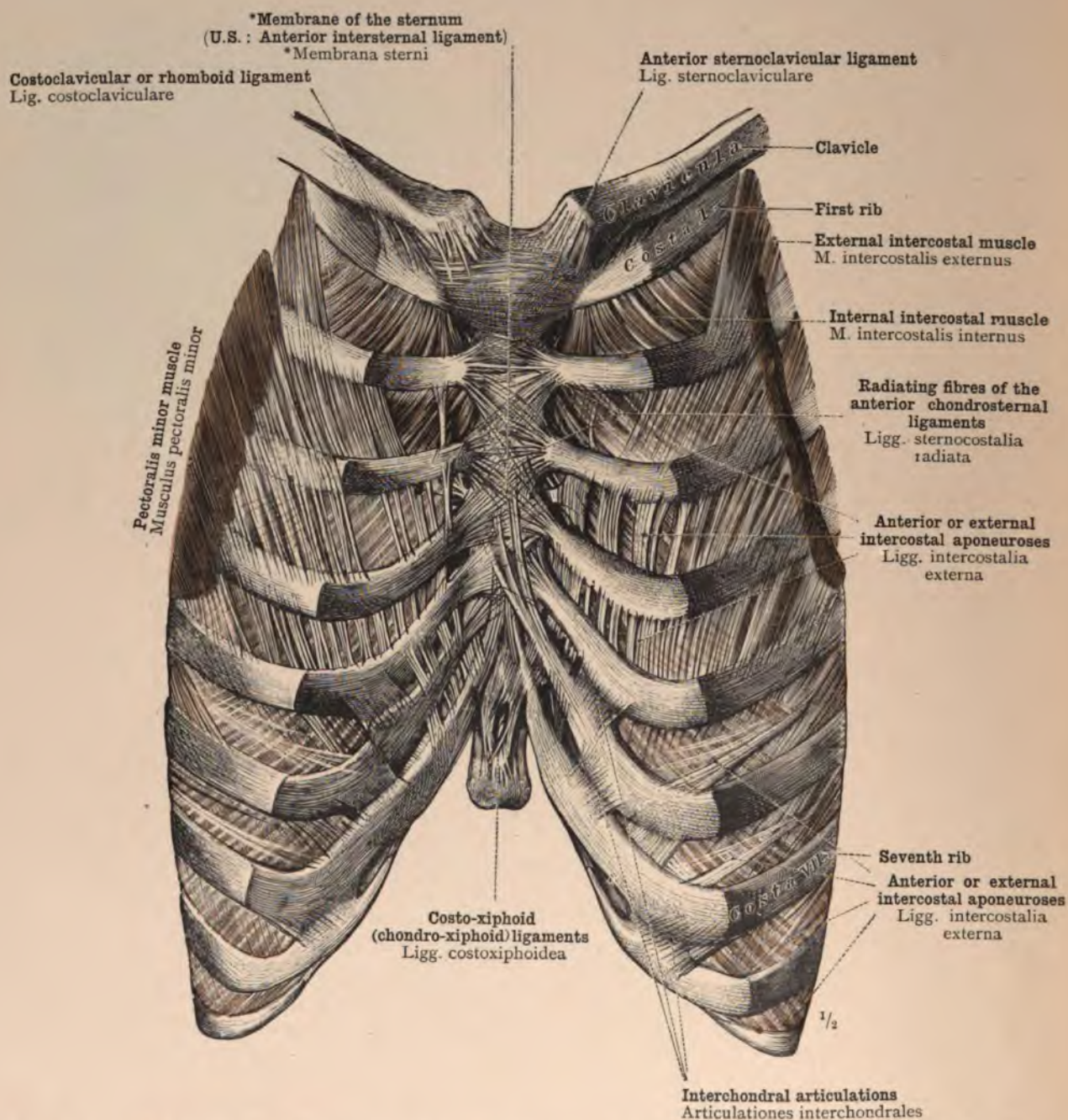


FIG. 414.—\*MEMBRANE OF THE STERNUM. ANTERIOR CHONDROSTERNAL LIGAMENTS, COSTO-XIPHOID LIGAMENTS, AND ANTERIOR OR EXTERNAL INTERCOSTAL APONEUROSES. THE RELATION OF THESE LATTER TO THE EXTERNAL INTERCOSTAL MUSCLES AND TO THE PECTORALIS MINOR MUSCLE. (ANTERIOR WALL OF THE THORAX SEEN FROM BEFORE.)

Articulationes sternocostales—Chondrosternal articulations.



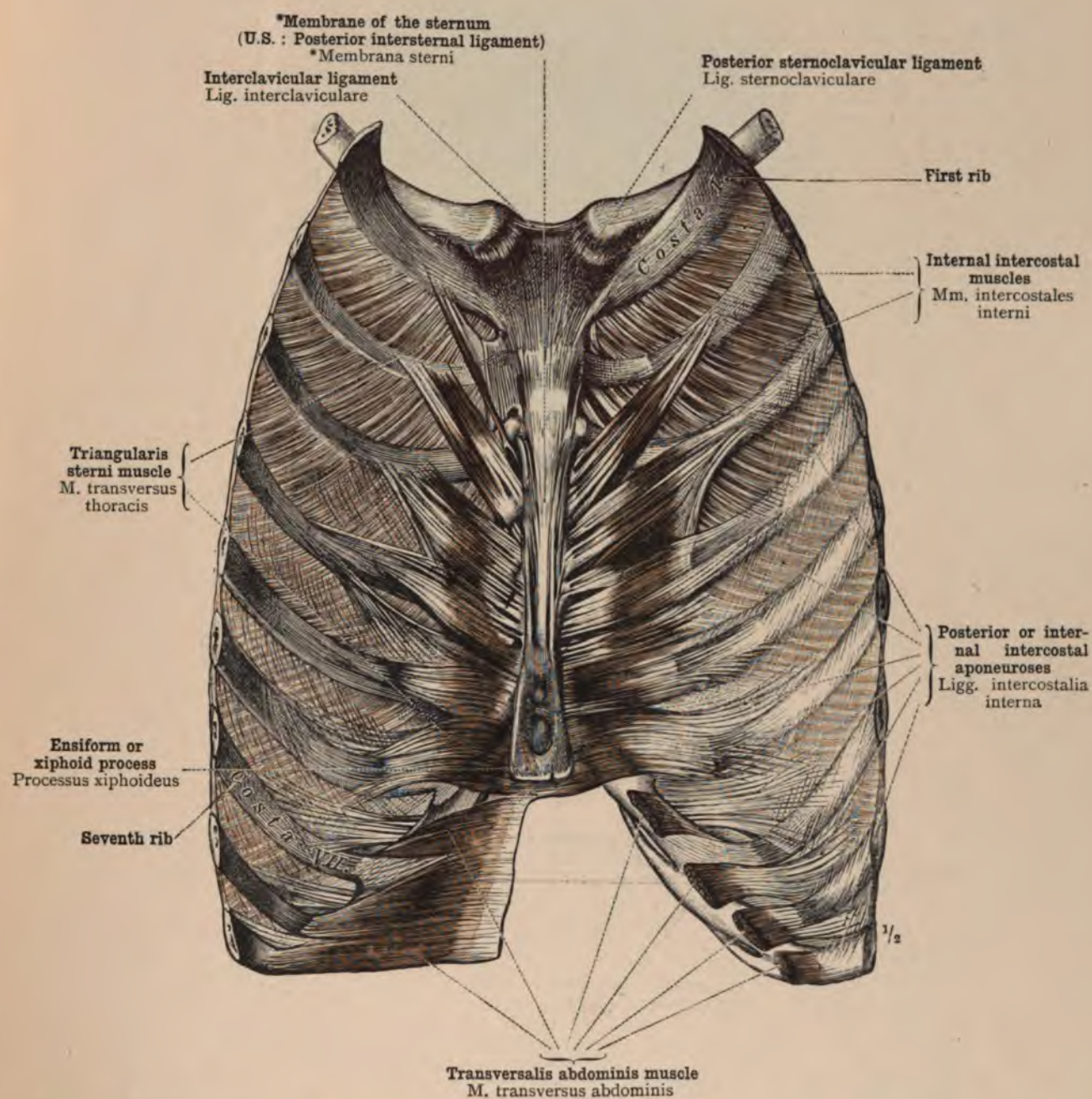


FIG. 415.—POSTERIOR OR INTERNAL INTERCOSTAL APONEUROSES, AND THEIR RELATION TO THE TRIANGULARIS STERNI AND TRANSVERSALIS ABDOMINIS MUSCLES. STERNOCLAVICULAR ARTICULATION. (ANTERIOR WALL OF THE THORAX SEEN FROM BEHIND.)



## THE ARTICULATIONS OF THE TRUNK

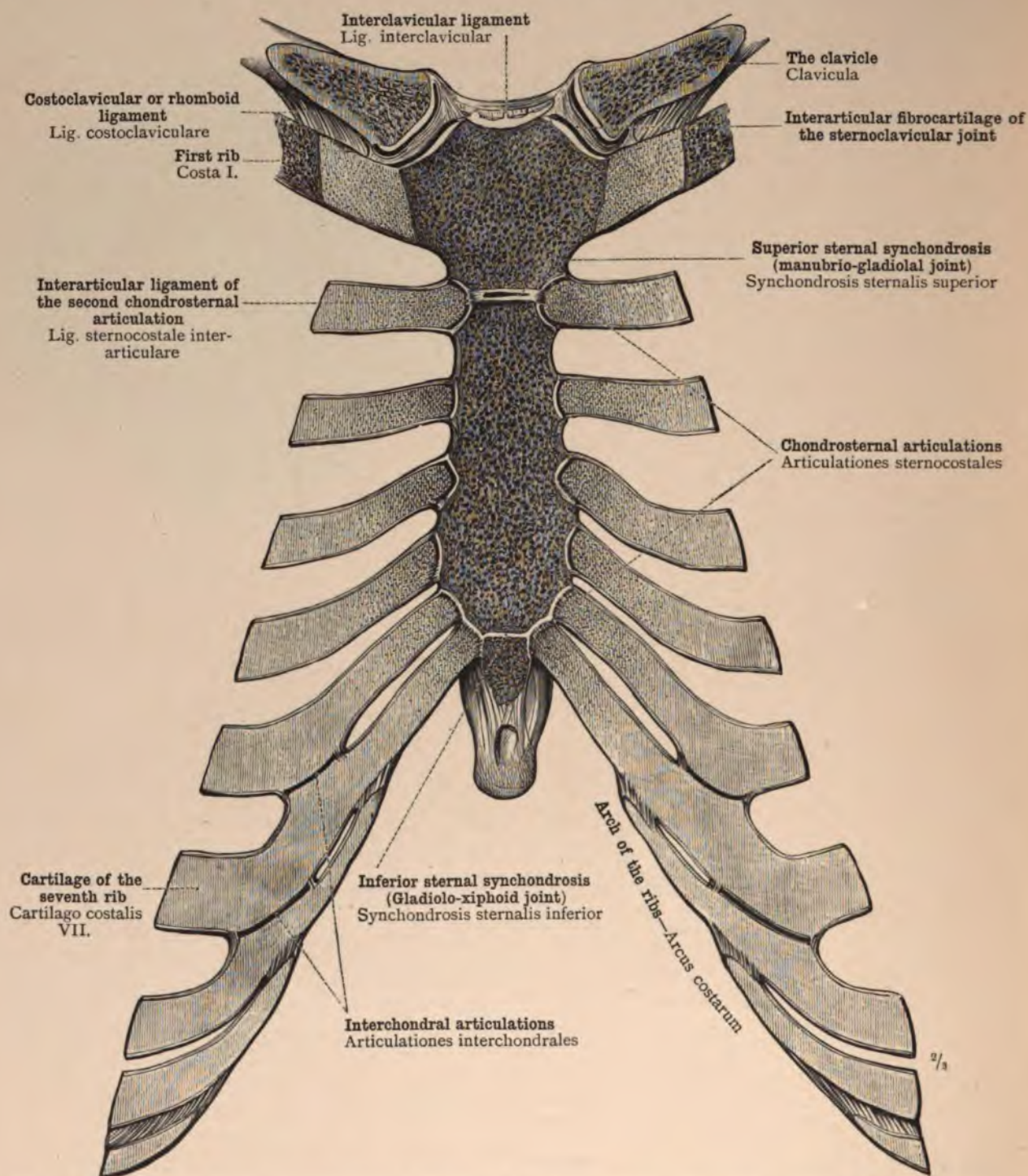


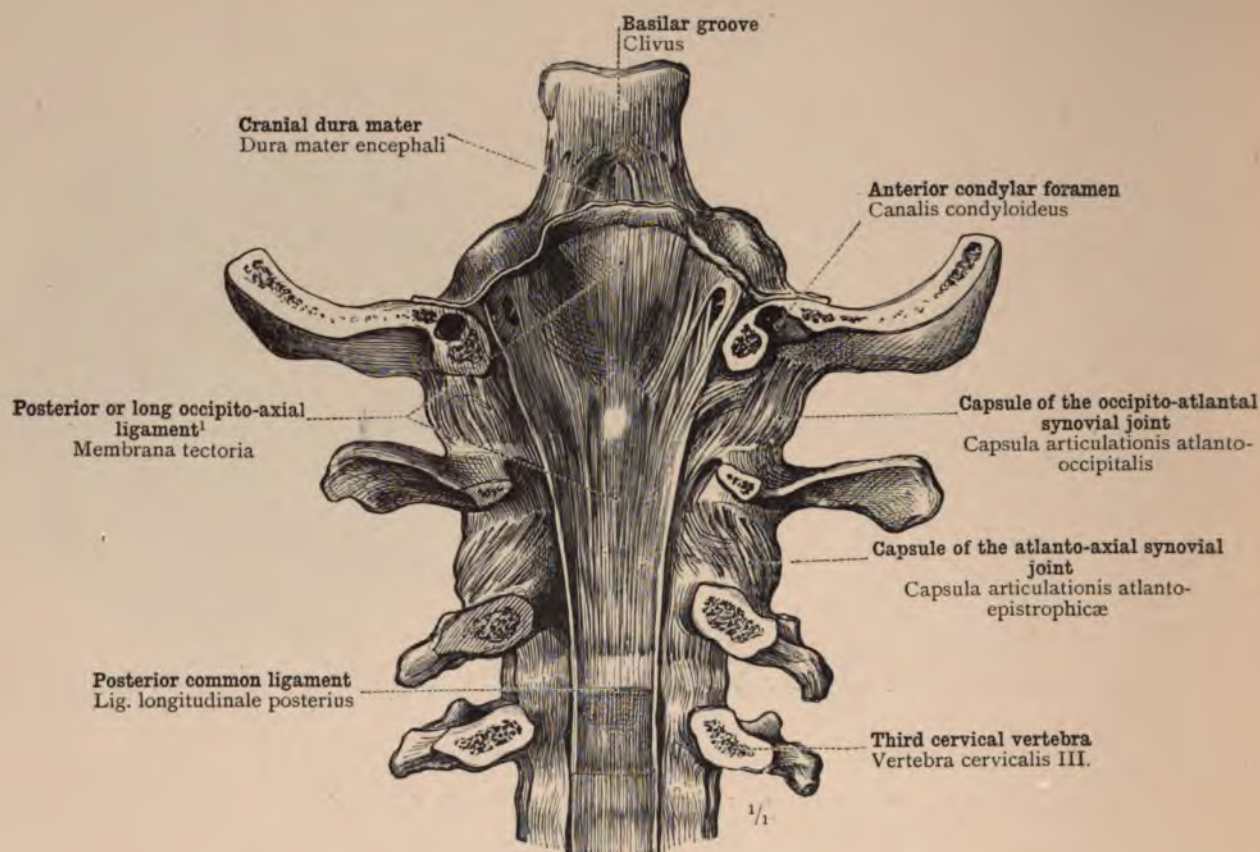
FIG. 416.—CHONDROSTERNAL ARTICULATIONS. INTERCHONDRAL ARTICULATIONS. INTERSTERNAL SYNCHONDROSES. STERNOCLAVICULAR ARTICULATION. (POSTERIOR HALF OF A FRONTAL SECTION THROUGH THE STERNUM, THE CARTILAGES OF THE RIBS, AND THE STERNAL EXTREMITIES OF THE CLAVICLES.)

Articulationes sternocostales—Chondrosternal articulations.



ARTICULATIONES  
ET LIGAMENTA CAPITIS

THE ARTICULATIONS  
AND LIGAMENTS OF THE HEAD



<sup>1</sup> See note to p. 177.

FIG. 417.—POSTERIOR OCCIPITO-AXIAL LIGAMENT. OCCIPITO-ATLANTAL AND ATLANTO-AXIAL SYNOVIAL JOINTS. (THE THREE UPPERMOST CERVICAL VERTEBRÆ AND THE OCCIPITAL BONE SEEN FROM BEHIND.)

By a frontal section behind the occipital condyles, the squamous portion of the occipital bone and the neural arches have been removed. The dura mater has been cut transversely in the basilar groove, and turned upwards.

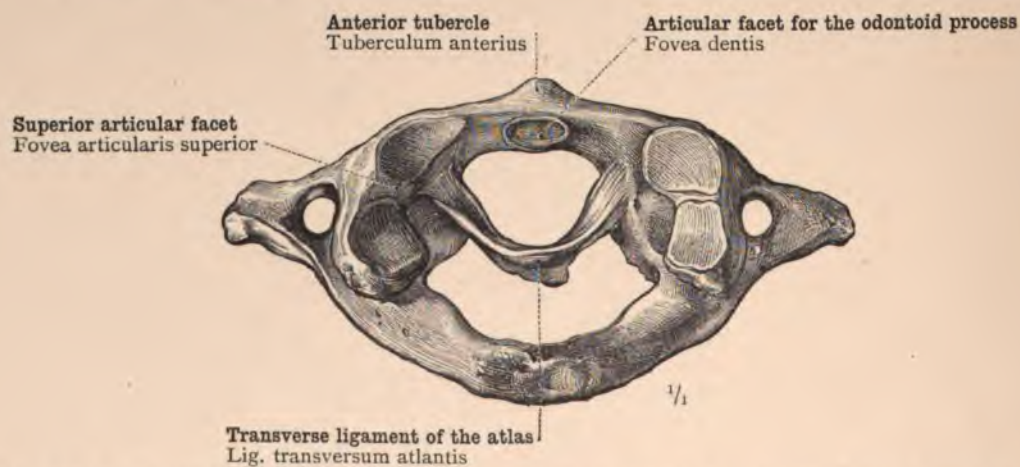


FIG. 418.—TRANSVERSE LIGAMENT OF THE ATLAS. (THE ATLAS SEEN FROM ABOVE.)

Articulationes atlanto-occipitalis et atlanto-epistrophica—Occipito-atlantal and atlanto-axial articulations.



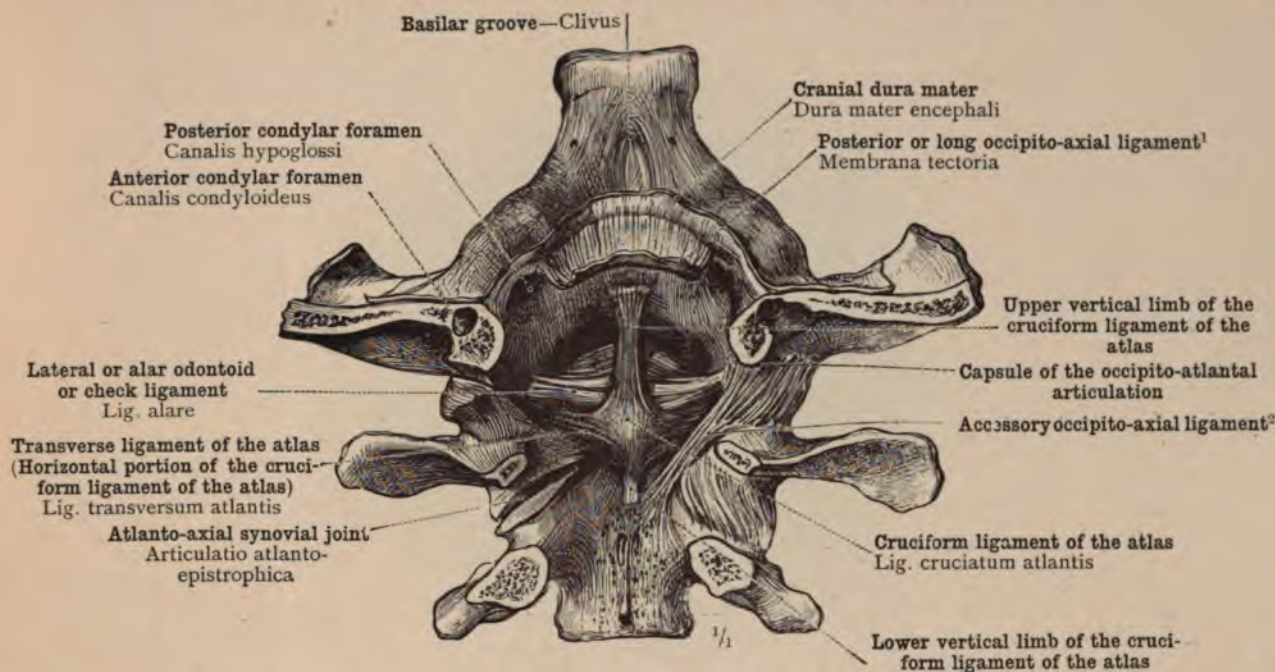


FIG. 419.—CRUCIFORM LIGAMENT OF THE ATLAS; LATERAL OR ALAR ODONTOID OR CHECK LIGAMENTS. OCCIPITO-ATLANTAL AND ATLANTO-AXIAL SYNOVIAL JOINTS, THE RIGHT CLOSED, THE LEFT OPEN.

The cranial dura mater and the posterior or long occipito-axial ligament<sup>1</sup> have been cut transversely in the basilar groove and turned upwards.

<sup>1</sup> See note to p. 177.

<sup>2</sup> Accessory occipito-axial ligament. This ligament is not mentioned by the author, though it is well shown in Fig. 419. The accessory ligament is a bundle of fibres strengthening the capsule of the occipito-atlantal joint at its postero-internal angle. It runs downwards and inwards from the back of the occipital condyle to the body of the axis near the base of the odontoid process.—T.R.

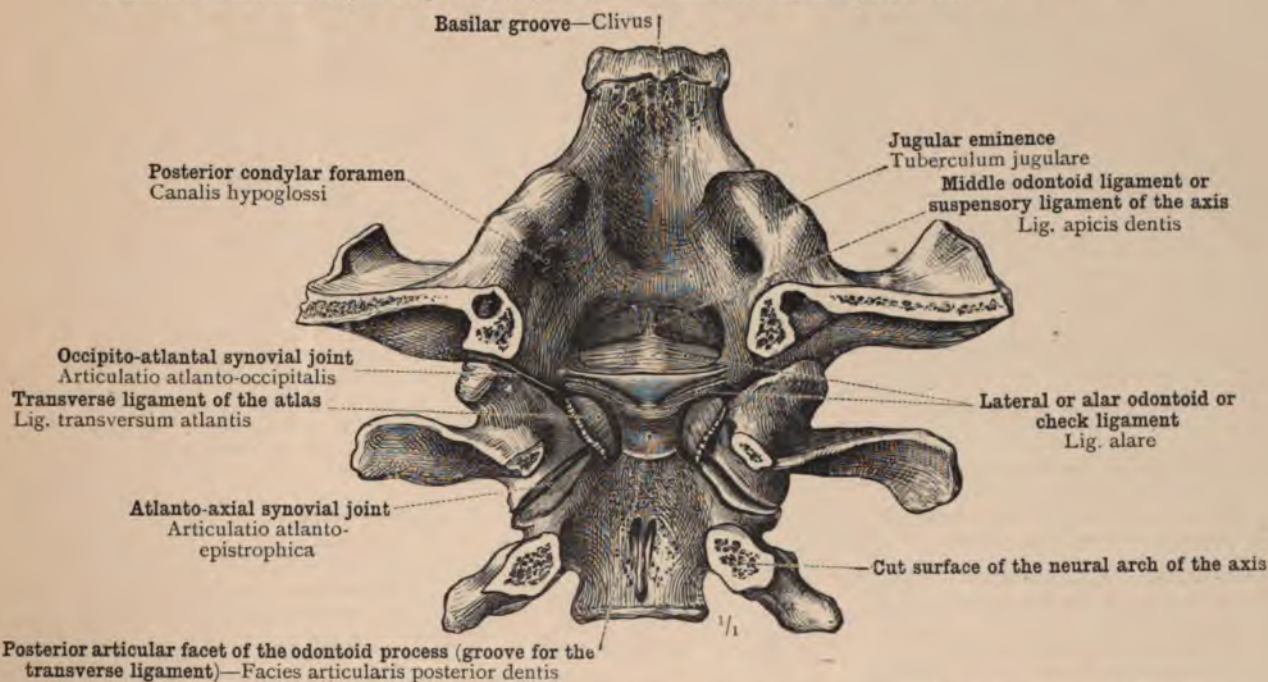


FIG. 420.—LATERAL OR ALAR ODONTOID OR CHECK LIGAMENTS. MIDDLE ODONTOID LIGAMENT OR SUSPENSORY LIGAMENT OF THE AXIS.

The transverse ligament of the atlas has been divided in the middle and the parts have been turned outwards; the dura mater and the posterior or long occipito-axial ligament have been entirely removed.

THE ATLAS AND THE AXIS WITH THE ANTERIOR PORTION OF THE OCCIPITAL BONE SEEN FROM BEHIND, A SECTION HAVING BEEN MADE SIMILAR TO THAT IN THE PREPARATION SHOWN IN FIG. 414.

Articulationes atlanto-occipitalis et atlanto-epistrophica—Occipito-atlantal and atlanto-axial articulations.







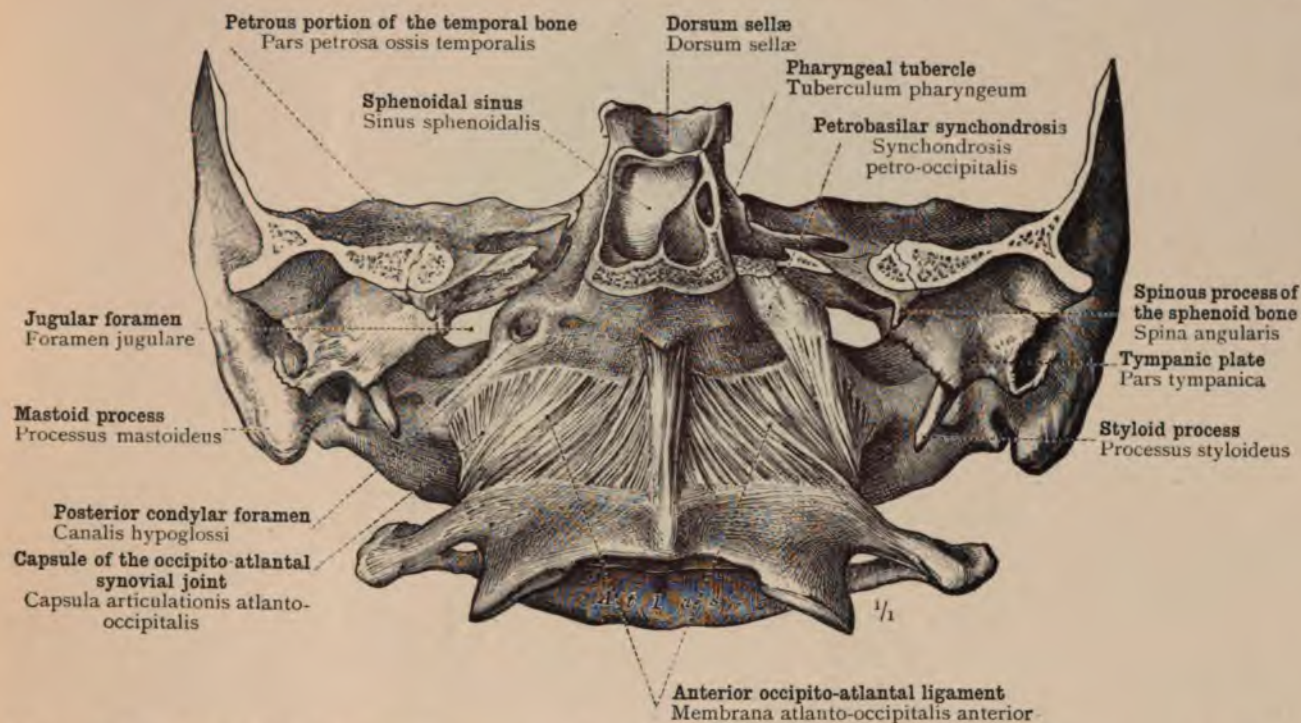


FIG. 423.—ANTEP OR OCCIPITO-ATLANTAL LIGAMENT AND PETROBASILAR SYNCHONDROSIS. (THE ATLAS WITH THE POSTERIOR PORTION OF THE BASE OF THE SKULL, SEEN FROM BEFORE.)

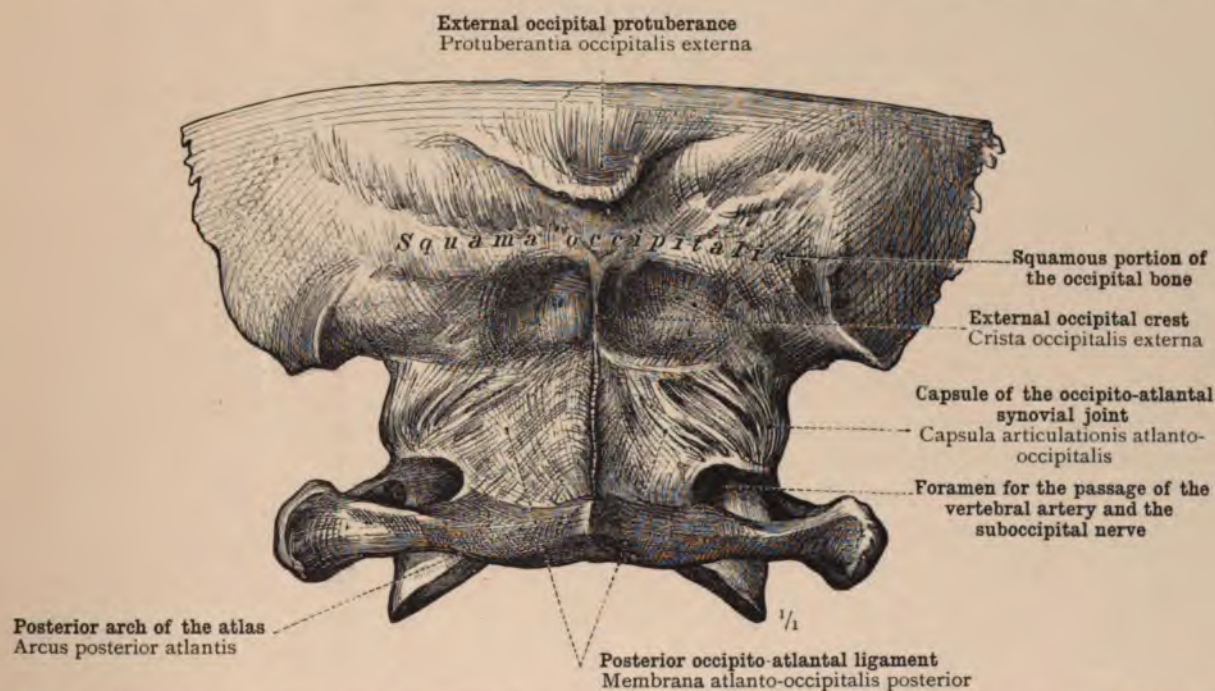


FIG. 424.—POSTERIOR OCCIPITO-ATLANTAL LIGAMENT. (THE ATLAS WITH THE OCCIPITAL BONE, SEEN FROM BEHIND.)

Articulatio atlanto-occipitalis—Occipito-atlantal articulation.



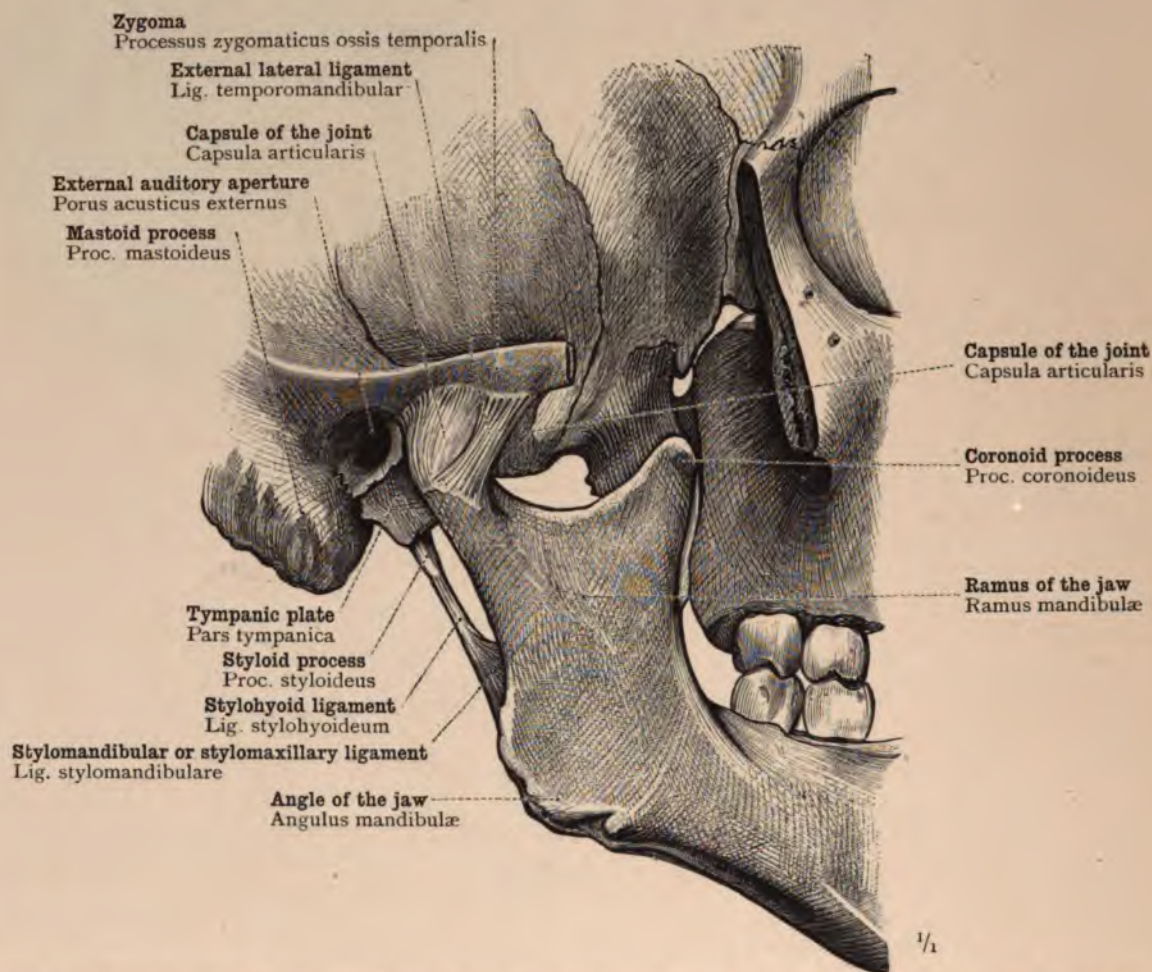


FIG. 425.—ARTICULATIO MANDIBULARIS, TEMPOROMANDIBULAR OR TEMPOROMAXILLARY ARTICULATION: LIGAMENTA TEMPOROMANDIBULARE ET STYLOMANDIBULARE, EXTERNAL LATERAL AND STYLOMANDIBULAR OR STYLOMAXILLARY LIGAMENTS. LIGAMENTUM STYLOHYOIDEUM, STYLOHYOID LIGAMENT. (RIGHT TEMPOROMANDIBULAR OR TEMPOROMAXILLARY ARTICULATION, SEEN FROM THE OUTER SIDE.)

Articulatio mandibularis—Temporomandibular or temporomaxillary articulation.



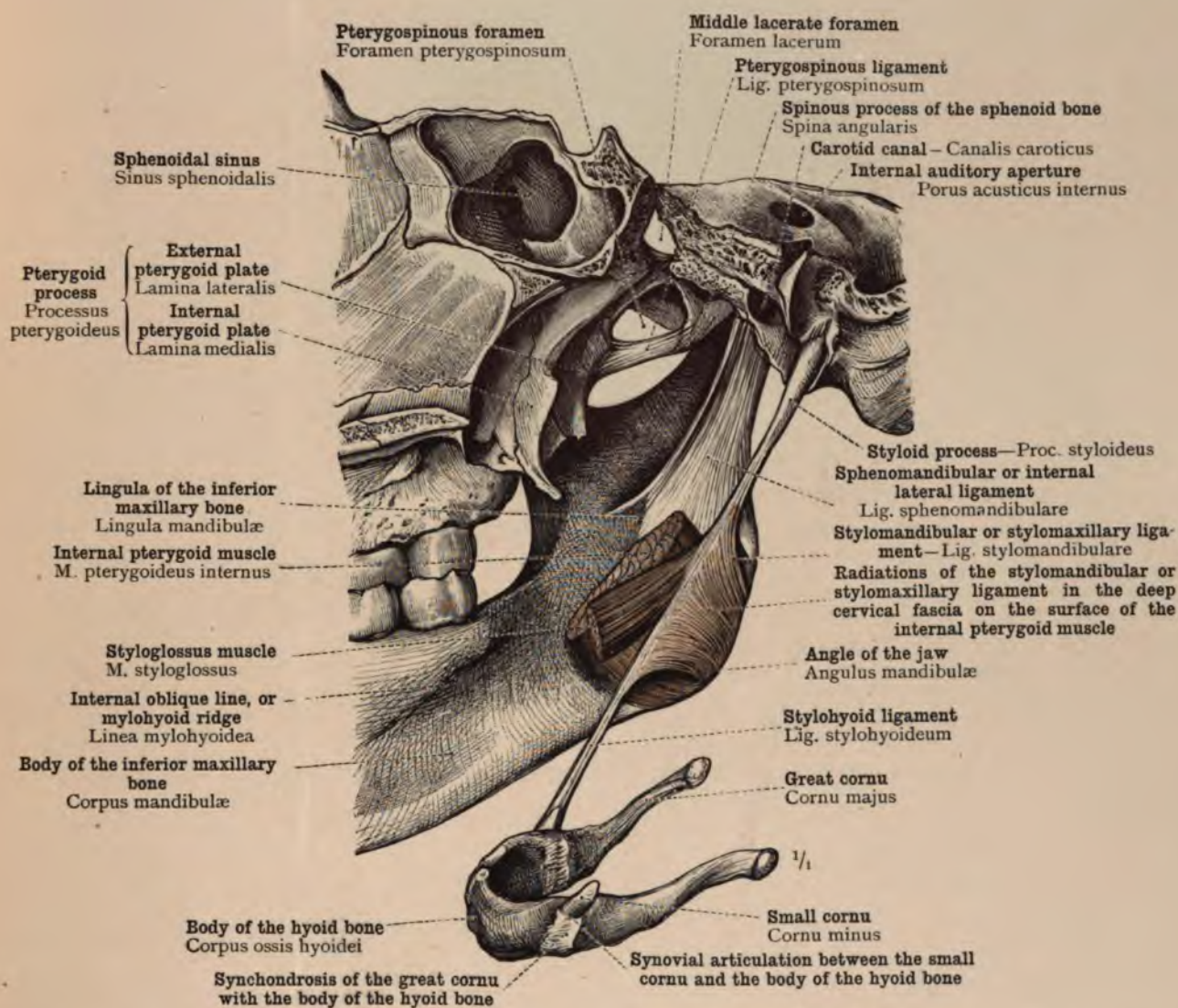


FIG. 426.—ARTICULATIO MANDIBULARIS, TEMPOROMANDIBULAR OR TEMPOROMAXILLARY ARTICULATION: LIGAMENTA SPHENOMANDIBULARE ET STYLOMANDIBULARE, SPHENOMANDIBULAR OR INTERNAL LATERAL AND STYLOMANDIBULAR OR STYLOMAXILLARY LIGAMENT. RELATIONS OF THE STYLOMANDIBULAR OR STYLOMAXILLARY LIGAMENT TO STYLOGLOSSUS AND INTERNAL PTERYGOID MUSCLES. LIGAMENTUM PTERYGOSPINOsum, PTERYGOSPINOUS LIGAMENT. (THE POSTERIOR PART OF THE FACIAL PORTION OF THE SKULL WITH THE ADJOINING PORTION OF THE BASE OF THE SKULL, DIVIDED SAGITALLY SOMEWHAT TO THE LEFT OF THE MEDIAN PLANE.)

The basilar and condylar portions of the occipital bone have been removed.

Articulatio mandibularis—Temporomandibular or temporomaxillary articulation.



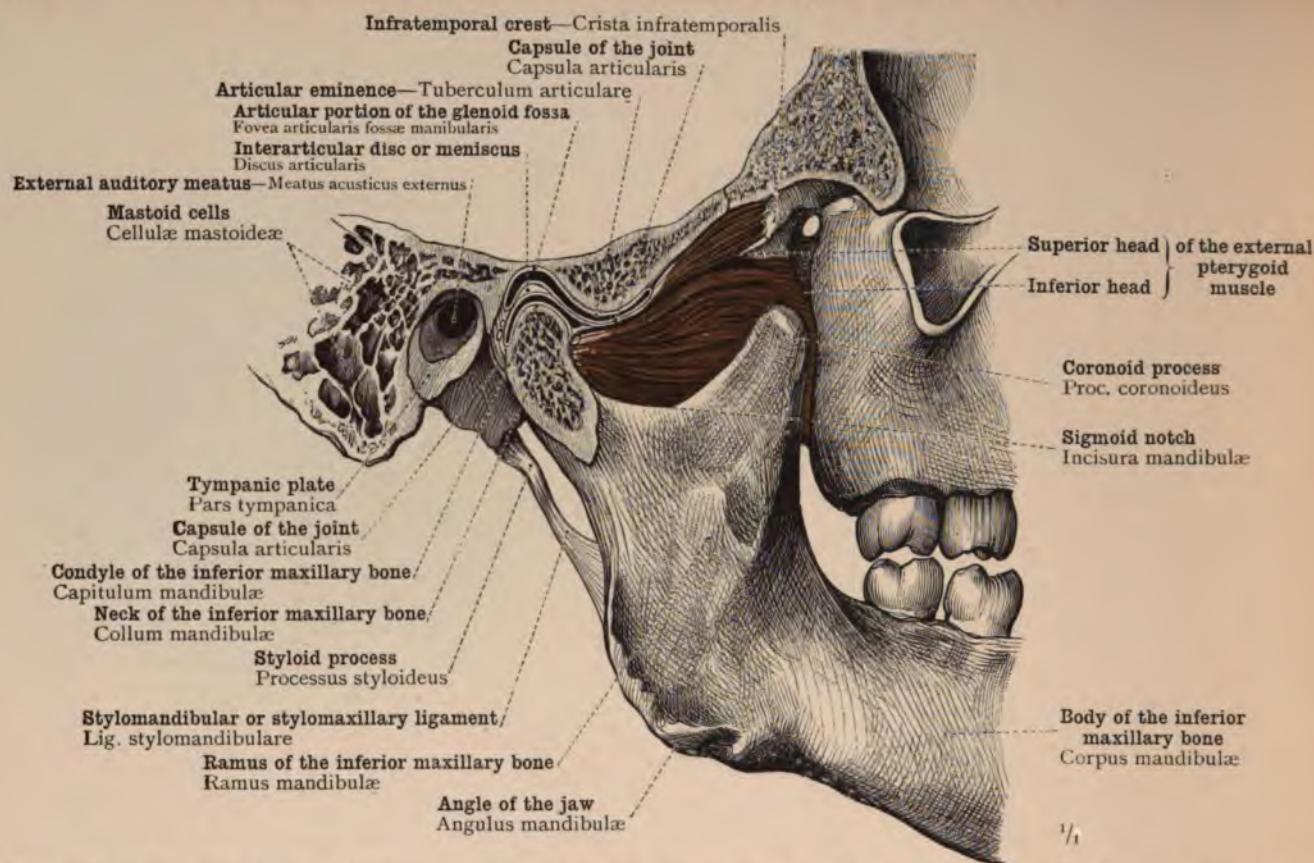


FIG. 427.—ARTICULATIO MANDIBULARIS, TEMPOROMANDIBULAR OR TEMPOROMAXILLARY ARTICULATION: DISCUS ARTICULARIS, INTERARTICULAR DISC OR MENISCUS, AND LIGAMENTUM STYLOMANDIBULARE, STYLOMANDIBULAR OR STYLOMAXILLARY LIGAMENT. RELATIONS OF THE SUPERIOR HEAD OF THE EXTERNAL PTERYGOID MUSCLE TO THE ANTERIOR WALL OF THE CAPSULAR LIGAMENT AND TO THE INTERARTICULAR DISC OR MENISCUS. (RIGHT TEMPOROMANDIBULAR OR TEMPOROMAXILLARY ARTICULATION, DIVIDED IN A PLANE NEARLY APPROACHING THE SAGITTAL; THE INTERNAL PORTION BEING FIGURED.)

The section runs somewhat obliquely forwards and inwards.

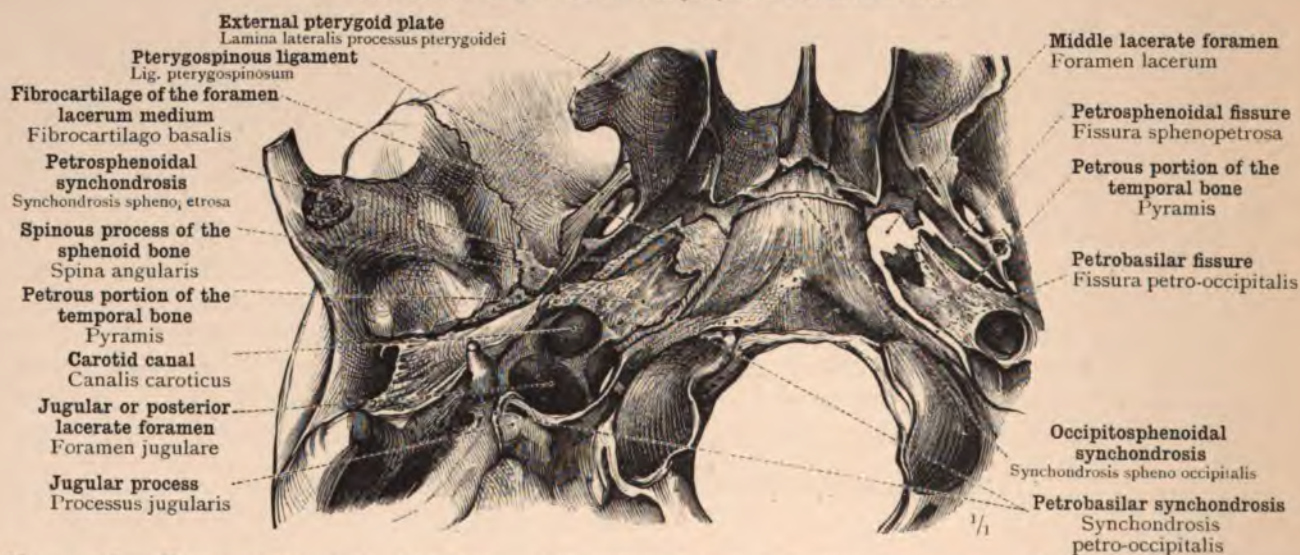


FIG. 428.—FIBROCARILAGO BASALIS; FIBROCARILAGE OF THE FORAMEN LACERUM MEDIUM: SYNCHONDROSES SPHENOPETROSA, PETRO-OCIPITALIS, ET SPHENO-OCIPITALIS; PETROSPHENOIDAL, PETROBASILAR, AND OCCIPITOSPHENOIDAL SYNCHONDROSES: LIGAMENTUM PTERYGOSPINOsum; PTERYGOSPINOUS LIGAMENT. (THE MIDDLE PORTION OF THE BASE OF THE SKULL, SEEN FROM BELOW.)

Articulatio mandibularis, temporomandibular or temporomaxillary articulation—Synchondroses et ligamenta baseos cranii, synchondroses and ligaments of the base of the skull.



JUNCTURÆ OSSIUM  
EXTREMITATUM,  
SUPERIORIS ET INFERIORIS

THE ARTICULATIONS  
OF THE SUPERIOR AND INFERIOR  
EXTREMITIES

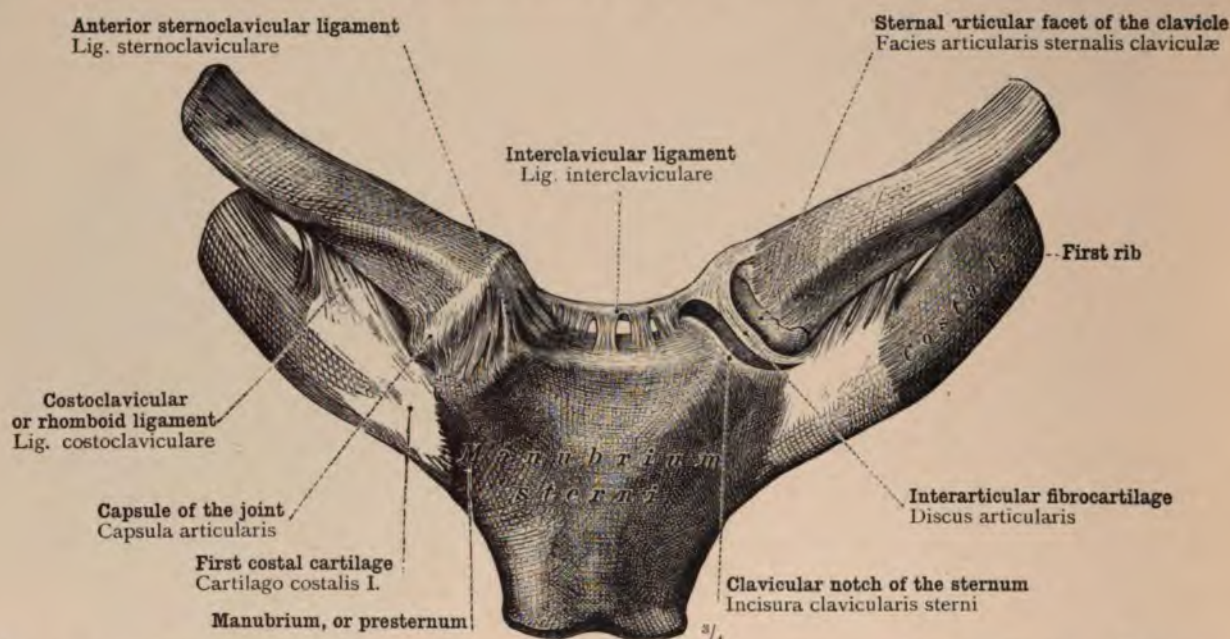
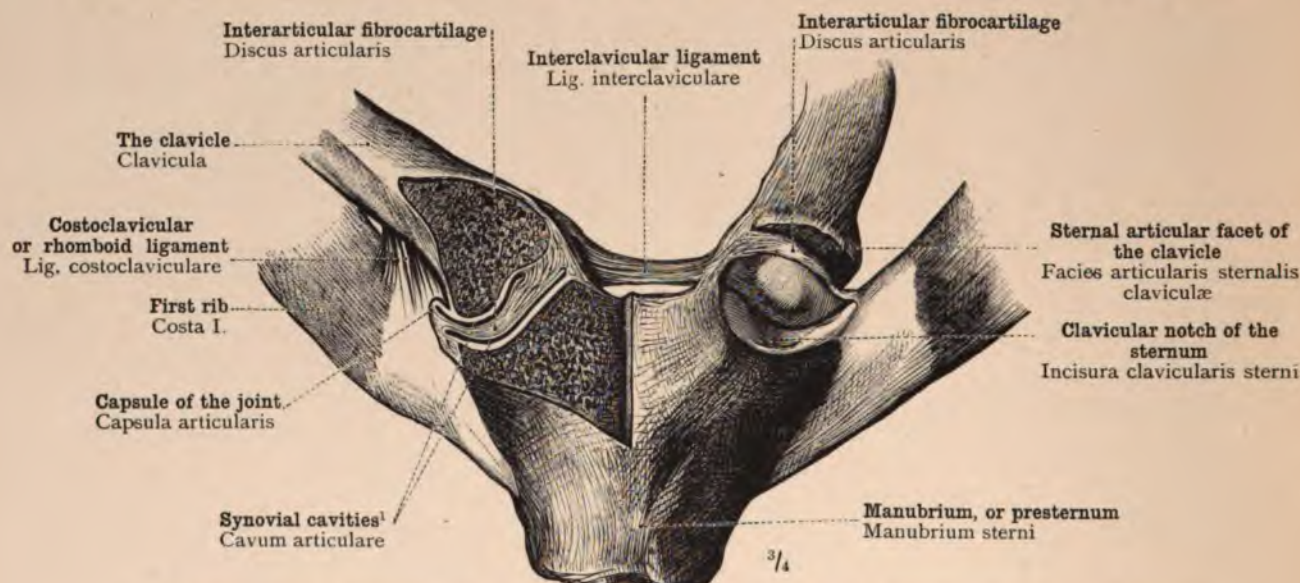


FIG. 429.—ARTICULATIO STERNOCLAVICULARIS, STERNOCLAVICULAR ARTICULATION: CAPSULA ARTICULARIS, CAPSULE OF THE JOINT; DISCUS ARTICULARIS, INTERARTICULAR FIBRO-CARTILAGE; LIGAMENTA INTERCLAVICULARE ET COSTOCLAVICULARE, INTERCLAVICULAR AND COSTOCLAVICULAR OR RHOMBOID LIGAMENTS.

The left sternoclavicular articulation has been opened by the removal of the anterior wall of the capsular ligament.



¹ The interarticular fibrocartilage is occasionally defective in the centre, and in rare cases even entirely wanting; there is then only one synovial cavity.—Tr.

FIG. 430.—ARTICULATIO STERNOCLAVICULARIS, STERNOCLAVICULAR ARTICULATION: DISCUS ET CAPSULA ARTICULARIS, INTERARTICULAR FIBRO-CARTILAGE AND CAPSULAR LIGAMENT; CAVUM ARTICULARE, SYNOVIAL CAVITY OR CAVITIES; LIGAMENTA INTERCLAVICULARE ET COSTOCLAVICULARE, INTERCLAVICULAR AND COSTOCLAVICULAR OR RHOMBOID LIGAMENTS.

The right sternoclavicular articulation has been divided by a frontal section; in the left, the capsule has been removed and the clavicle has been drawn backwards.

STERNOCLAVICULAR ARTICULATION, SEEN FROM BEFORE.

Articulationes et ligamenta cinguli extremitatis superioris—Articulations and ligaments of the shoulder-girdle.



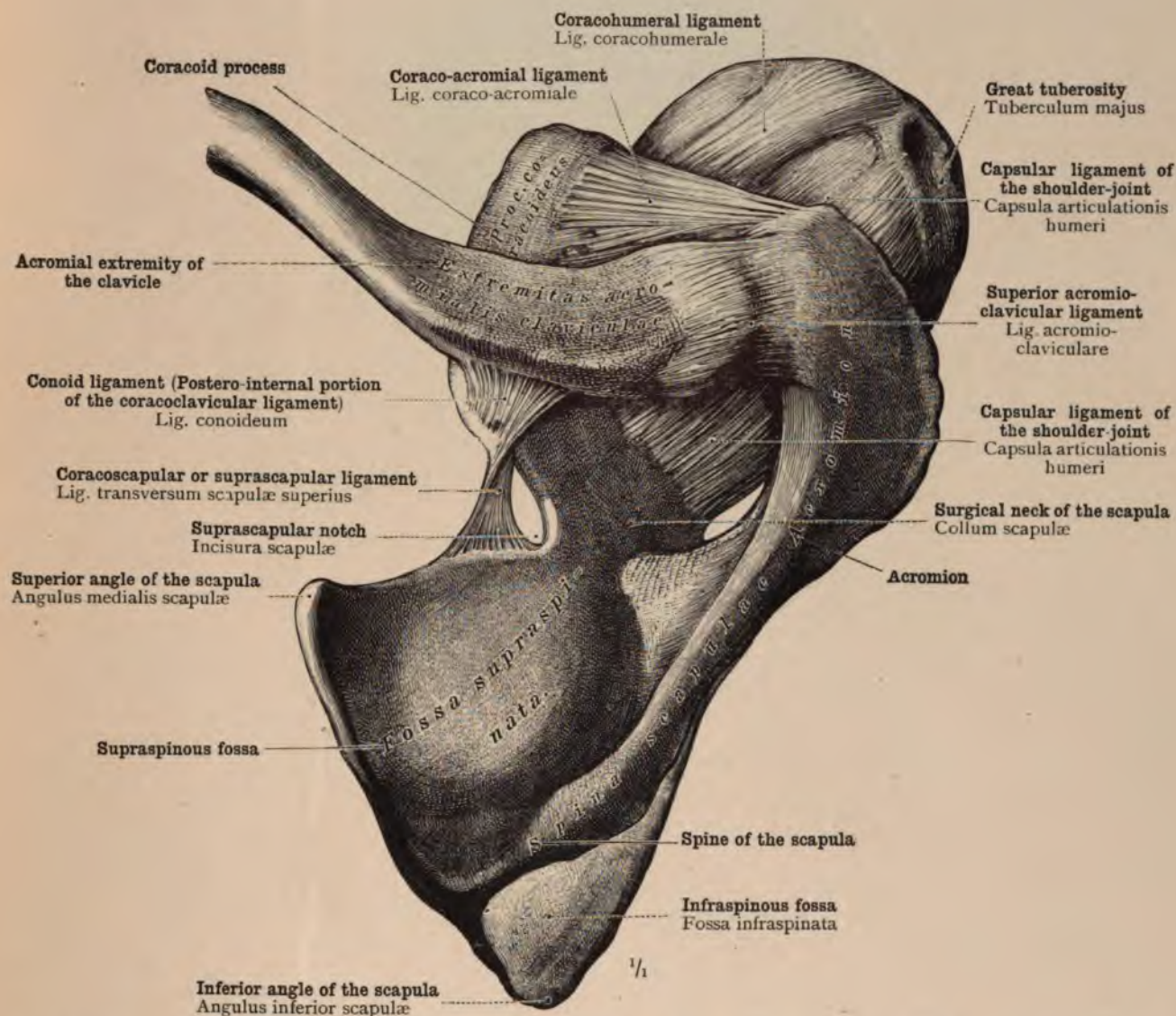


FIG. 431.—LIGAMENTA ACROMIOCLAVICULARE ET CORACOCALVICULARE, SUPERIOR ACROMIOCLAVICULAR LIGAMENT AND CORACOCALVICULAR LIGAMENT (CONOID PORTION); LIGAMENTA CORACO-ACROMIALE ET TRANSVERSUM SCAPULÆ SUPERIUS, CORACO-ACROMIAL AND SUPRASCAPULAR LIGAMENTS. (THE RIGHT SCAPULA WITH THE ACROMIAL HALF OF THE CLAVICLE AND THE SHOULDER-JOINT, SEEN FROM ABOVE.)

Articulationes et ligamenta cinguli extremitatis superioris—Articulations and ligaments of the shoulder-girdle.



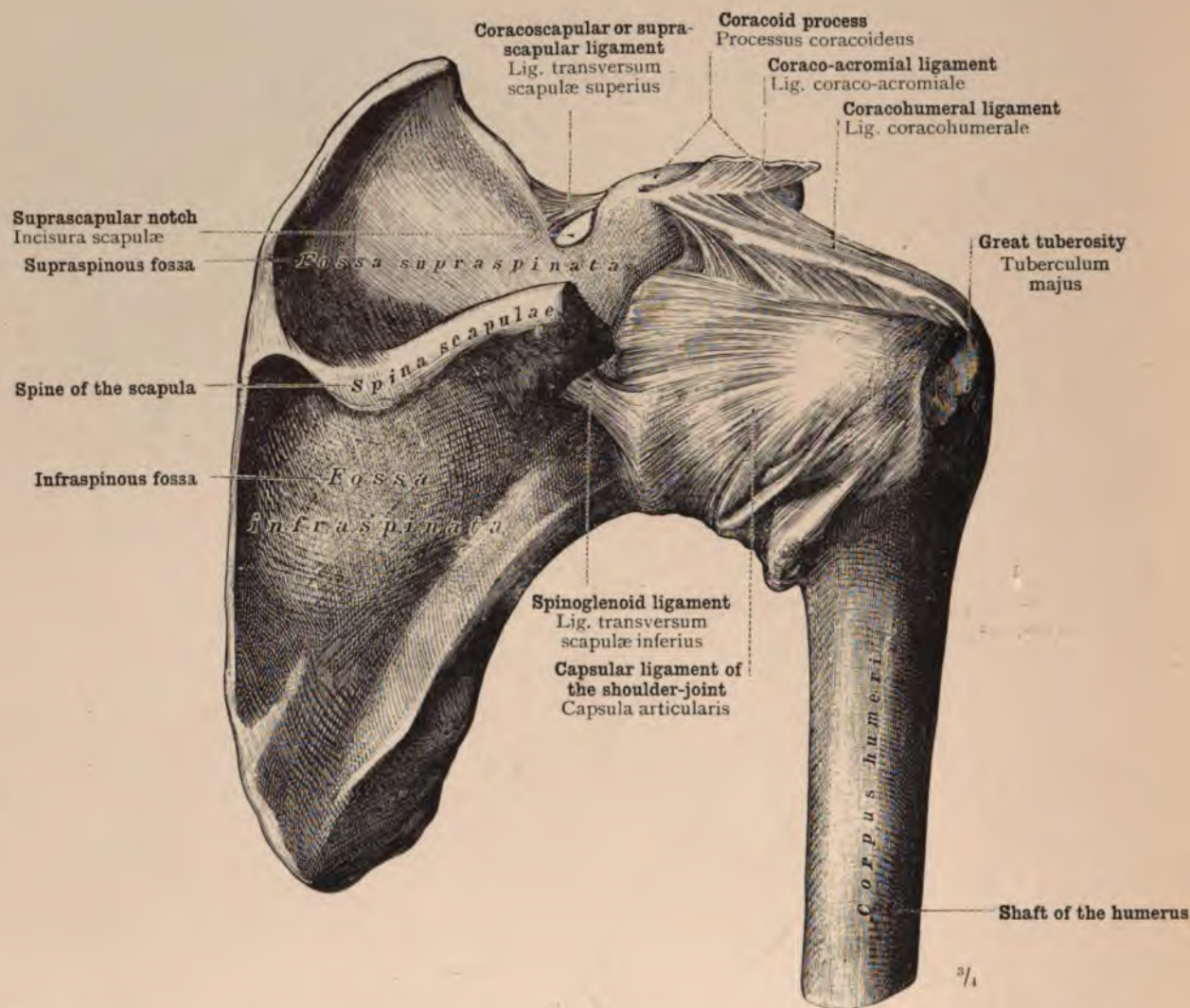


FIG. 432.—ARTICULATIO HUMERI, SHOULDER-JOINT: CAPSULA ARTICULARIS, CAPSULAR LIGAMENT; LIGAMENTUM CORACOHUMERALE, CORACOHUMERAL LIGAMENT; LIGAMENTUM TRANSVERSUM SCAPULÆ SUPERIUS ET LIGAMENTUM TRANSVERSUM SCAPULÆ INFERIUS, CORACOSCAPULAR OR SUPRASCAPULAR LIGAMENT AND SPINOGLENOID LIGAMENT. (THE RIGHT SHOULDER-JOINT, SEEN FROM BEHIND.)

The acromion has been sawn off, and the coracoid extremity of the coraco-acromial ligament has been turned upwards.

Articulatio humeri—Shoulder-joint.



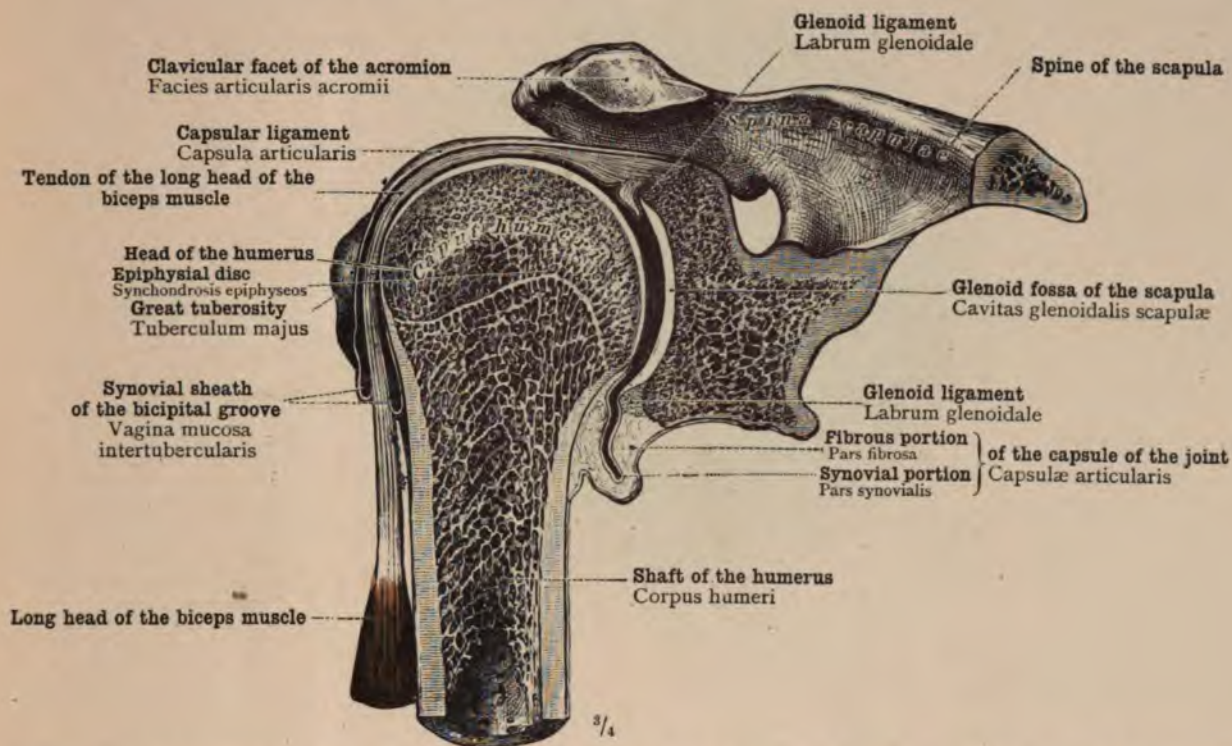


FIG. 433.—ARTICULATIO HUMERI, SHOULDER-JOINT: LABRUM GLENOIDALE, GLENOID LIGAMENT; RELATIONS OF THE TENDON OF THE LONG HEAD OF THE BICEPS MUSCLE AND OF THE EPIPHYSIAL DISC TO THE SYNOVIAL CAVITY OF THE ARTICULATION. (THE RIGHT SHOULDER-JOINT IN FRONTAL SECTION; POSTERIOR HALF.)

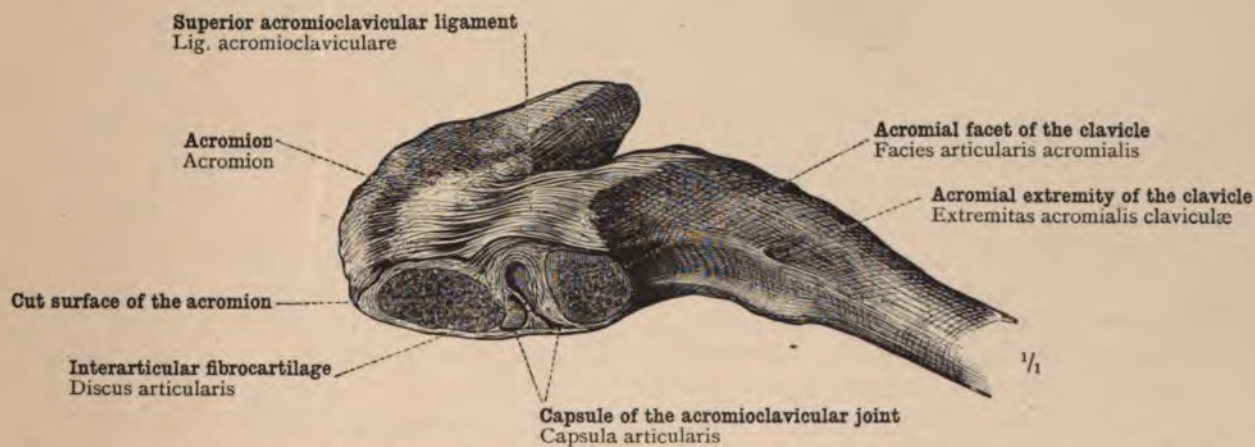


FIG. 434.—ARTICULATIO ACROMIOCLAVICULARIS, ACROMIOCLAVICULAR JOINT: DISCUS ARTICULARIS, INTERARTICULAR FIBROCARILAGE; LIGAMENTUM ACROMIOCLAVICULARE, SUPERIOR ACROMIOCLAVICULAR LIGAMENT. (THE RIGHT ACROMIOCLAVICULAR ARTICULATION IN FRONTAL SECTION; POSTERIOR PORTION.)

Articulatio humeri—Shoulder-joint.      Articulatio acromioclavicularis—Acromioclavicular articulation.



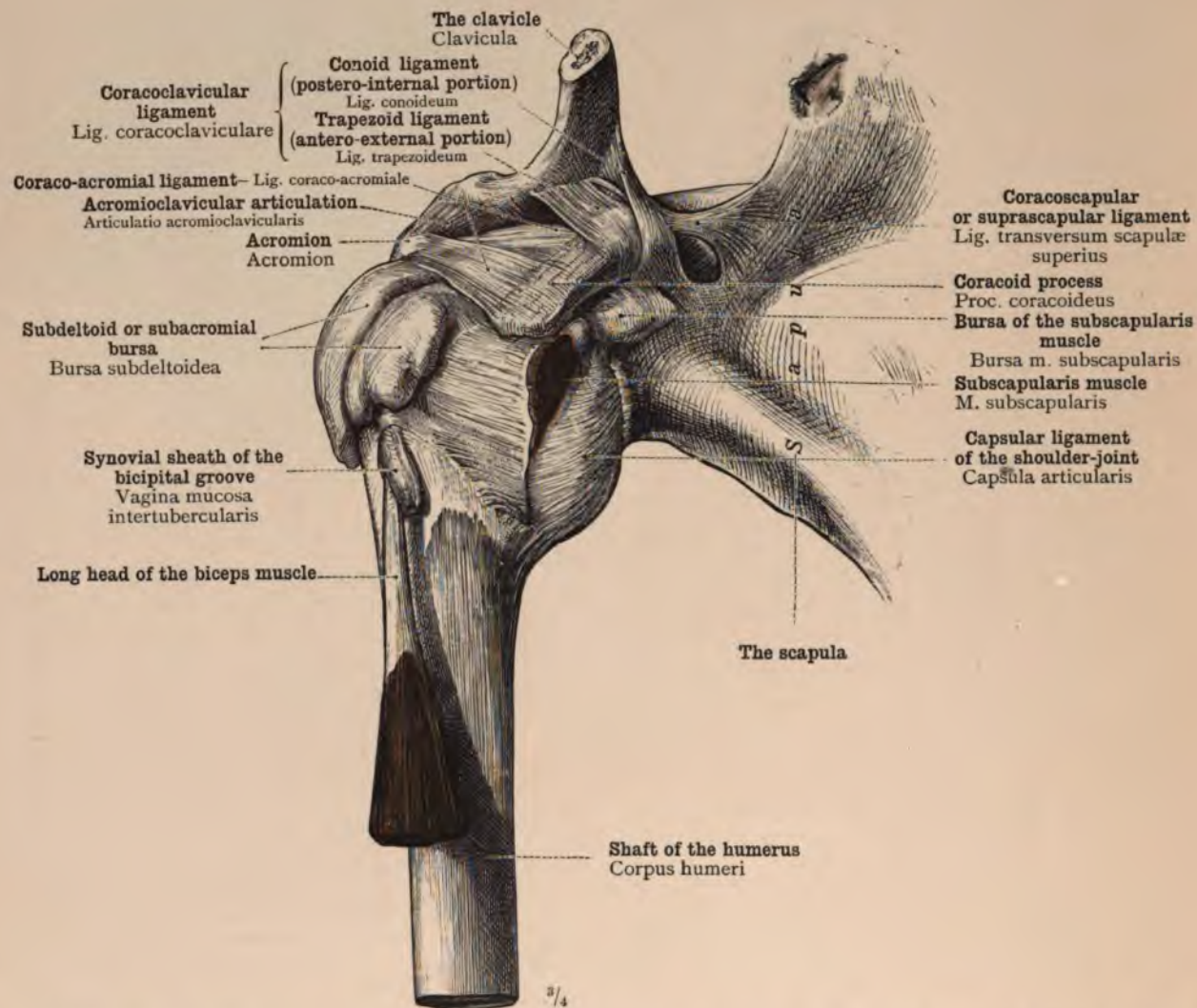


FIG. 435.—ARTICULATIONES HUMERI ET ACROMIOCLAVICULARIS, THE SHOULDER-JOINT AND THE STERNOCLAVICULAR ARTICULATION: BURSA MUSCULI SUBSCAPULARIS ET BURSA SUBDELTOIDEA, BURSA OF THE SUBSCAPULARIS MUSCLE AND SUBDELTOID OR SUBACROMIAL BURSA; VAGINA MUSCOSA INTERTUBERCULARIS, SYNOVIAL SHEATH OF THE BICIPITAL GROOVE; LIGAMENTA CORACOCCLAVICULARE, CORACO-ACROMIALE, ET TRANSVERSUM SCAPULÆ SUPERIUS; THE CORACOCCLAVICULAR (CONOID AND TRAPEZOID), CORACO-ACROMIAL, AND CORACOSCAPULAR OR SUPRASCAPULAR LIGAMENT. (RIGHT SHOULDER-JOINT, INJECTED WITH TALLOW; THE ACROMIAL EXTREMITY OF THE CLAVICLE HAS BEEN DRAWN UPWARDS. SEEN FROM BEFORE.)

Articulatio humeri—Shoulder-joint.



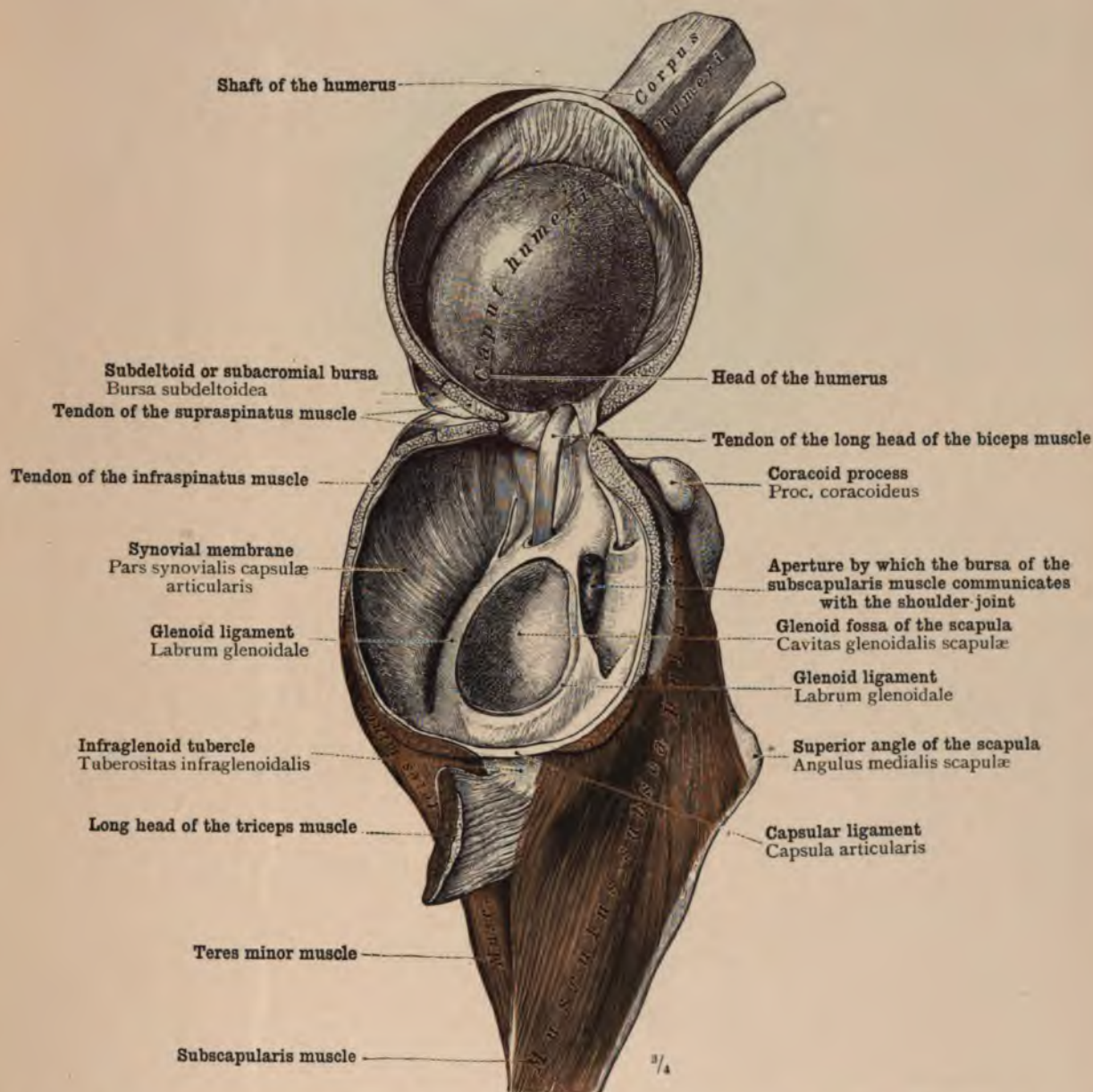
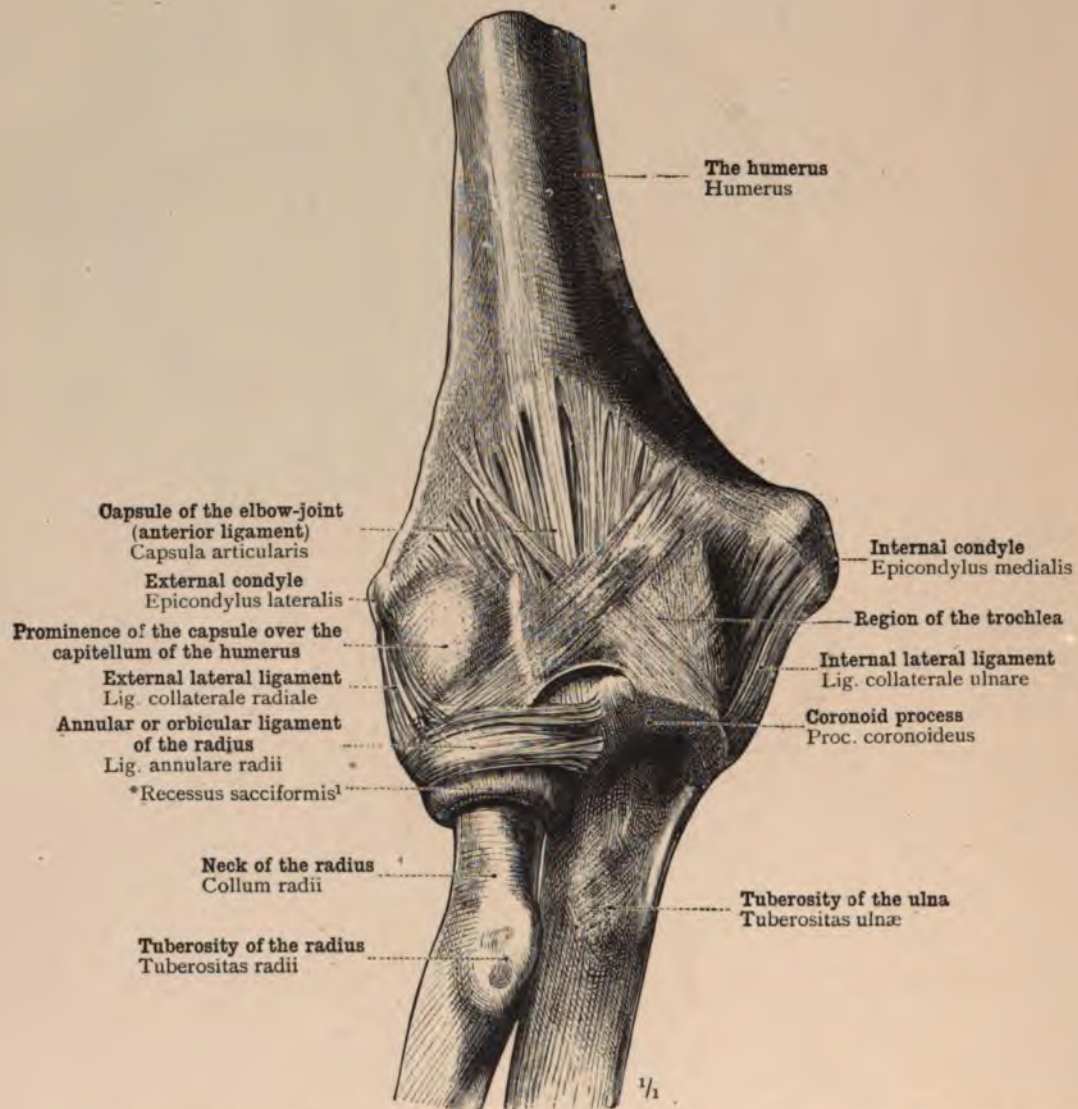


FIG. 436.—ARTICULATIO HUMERI, SHOULDER-JOINT: INTRACAPSULAR PORTION OF THE TENDON OF THE LONG HEAD OF THE BICEPS MUSCLE; LABRUM GLENOIDALE, GLENOID LIGAMENT; APERTURE OF COMMUNICATION OF THE BURSA OF THE SUBSCAPULARIS MUSCLE WITH THE SHOULDER-JOINT; RELATIONS OF THE TENDONS OF THE SCAPULAR MUSCLES WITH THE CAPSULE OF THE SHOULDER-JOINT. (RIGHT SHOULDER-JOINT FROM THE OUTER SIDE.)

After tallow had been injected into the joint and allowed to harden, the capsular ligament and the surrounding scapular muscles were divided by a circular incision midway between their attachments to the scapula and the humerus, a strip of the capsule, however, being left undivided, where the tendon of the long head of the biceps muscle passes through the joint. The humerus with the distal half of the capsule has been turned upwards.



<sup>1</sup> Projection of the synovial membrane of the elbow-joint, which membrane, after passing downwards between the vertical articular surface of the head of the radius and the inner surface of the orbicular ligament, forms a circular pouch or sac below this ligament around the neck of the radius.—Tr.

FIG. 437.—ARTICULATIO CUBITI, ELBOW-JOINT: CAPSULA ARTICULARIS, CAPSULE OF THE JOINT; LIGAMENTA COLLATERALIA, LATERAL LIGAMENTS; LIGAMENTUM ANNULARE RADII, ANNULAR OR ORBICULAR LIGAMENT OF THE RADIUS; \*RECESSUS SACCIFORMIS (*see note above*). (RIGHT ELBOW-JOINT, UNOPENED; ANTERIOR OR PALMAR ASPECT.)

The \*recessus sacciformis has been injected with tallow.

Articulatio cubiti—Elbow-joint.



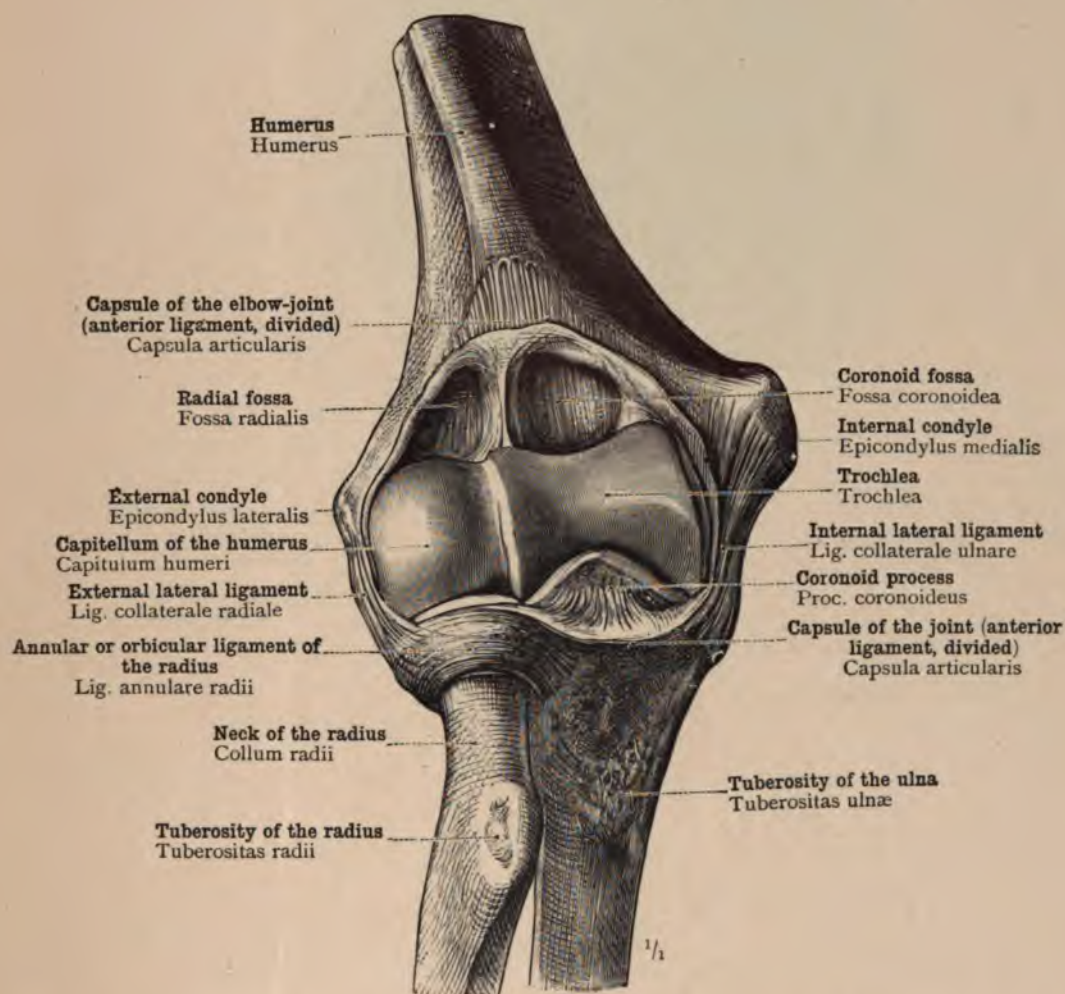


FIG. 438.—ARTICULATIO CUBITI, ELBOW-JOINT; ATTACHMENT OF THE CAPSULE TO THE ANTERIOR SURFACES OF THE HUMERUS AND THE ULNA (ANTERIOR LIGAMENT); LIGAMENTA COLLATERALIA, LATERAL LIGAMENTS; LIGAMENTUM ANNULARE RADII, ANNULAR OR ORBICULAR LIGAMENT OF THE RADIUS. (RIGHT ELBOW-JOINT; ANTERIOR OR PALMAR ASPECT.)

The capsule has been divided above and below, close to its attachment to the bones, and between the lateral ligaments (*i.e.*, the greater portion of the anterior ligament has been removed); the cut ends of the anterior ligament have been folded back against the bones. The \*recessus sacciformis—see note on previous page—has been removed.

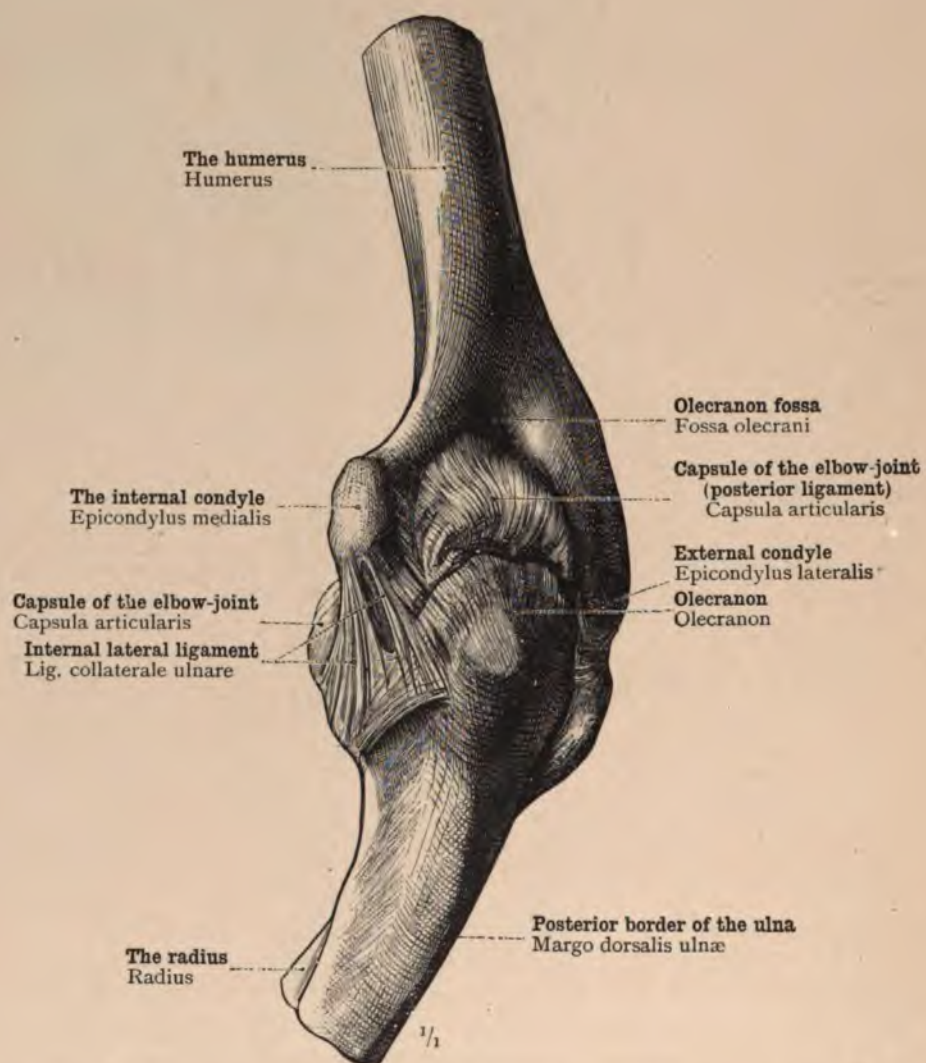
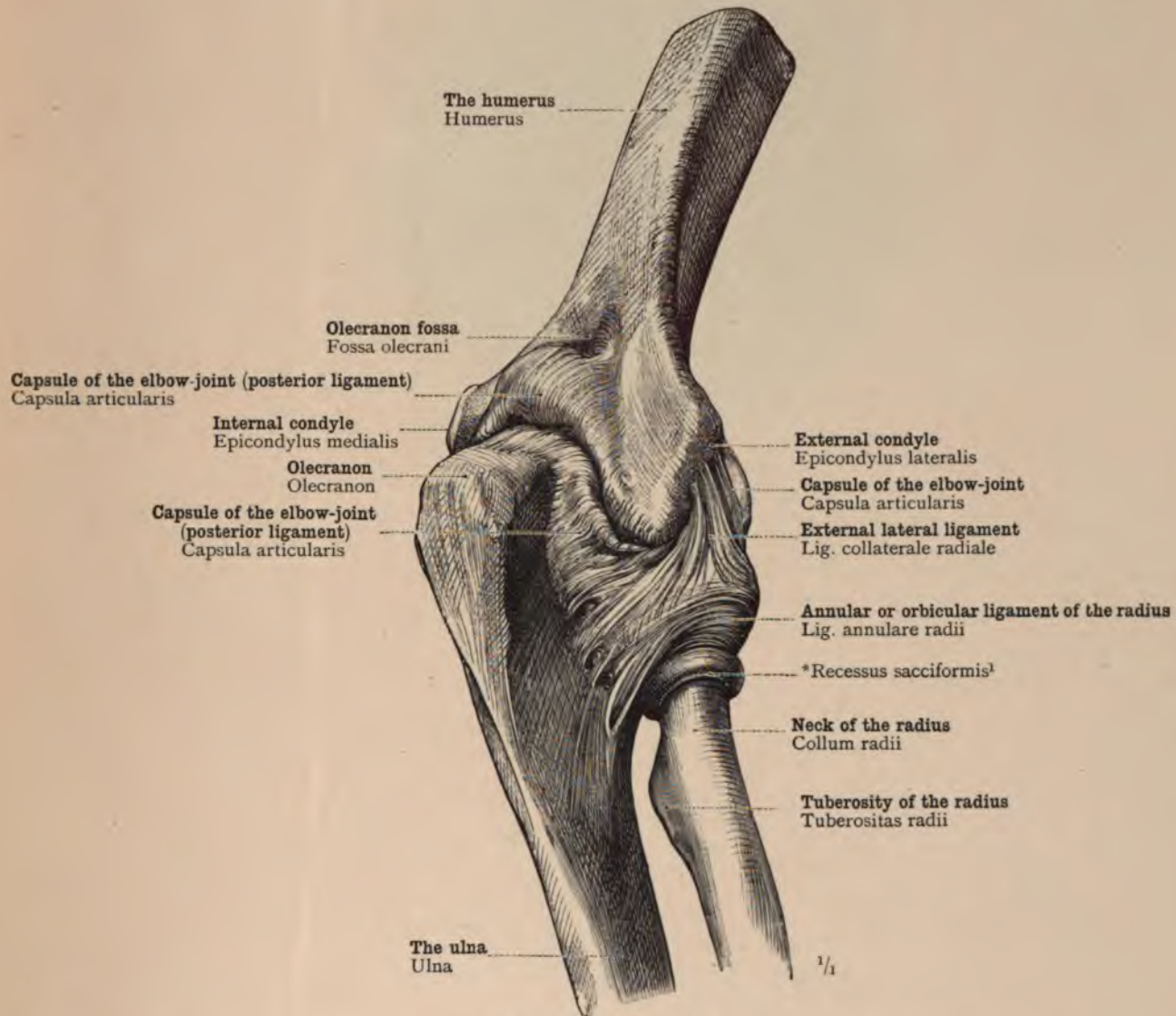


FIG. 439.—ARTICULATIO CUBITI, ELBOW-JOINT: CAPSULA ARTICULARIS, CAPSULE OF THE JOINT; LIGAMENTUM COLLATERALE ULNARE, INTERNAL LATERAL LIGAMENT. (RIGHT ELBOW-JOINT; POSTERO-INTERNAL ASPECT.)

Articulatio cubiti—Elbow-joint.





<sup>1</sup> See note to p. 204.

FIG. 440.—ARTICULATIO CUBITI, ELBOW-JOINT: CAPSULA ARTICULARIS, CAPSULE OF THE JOINT; LIGAMENTUM COLLATERALE RADIALE, EXTERNAL LATERAL LIGAMENT; LIGAMENTUM ANNULARE RADII, ANNULAR OR ORBICULAR LIGAMENT OF THE RADIUS; \*RECESSUS SACCIFORMIS. (RIGHT ELBOW-JOINT; POSTERO-EXTERNAL ASPECT.)

The \*recessus sacciformis has been injected with tallow.\*

Articulatio cubiti—Elbow-joint.

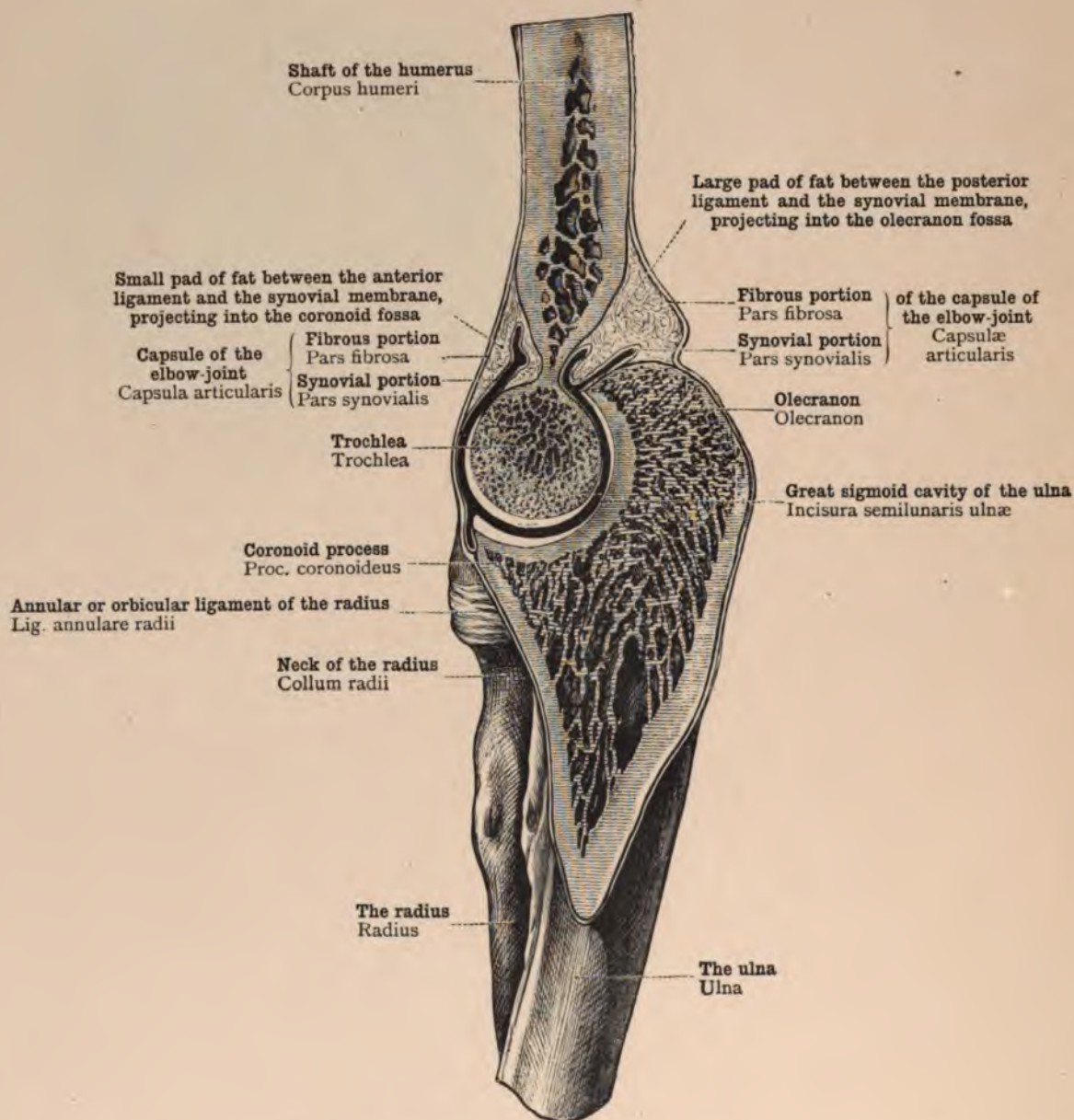


FIG. 441.—ARTICULATIO HUMERO-ULNARIS, HUMERO-ULNAR ARTICULATION. (SAGITTAL SECTION OF THE RIGHT ELBOW-JOINT; THE RADIAL HALF IS FIGURED.)

The section passes through the trochlea and the great sigmoid cavity of the ulna, in a plane vertical to the axis of the trochlea.

Articulatio cubiti—Elbow-joint.



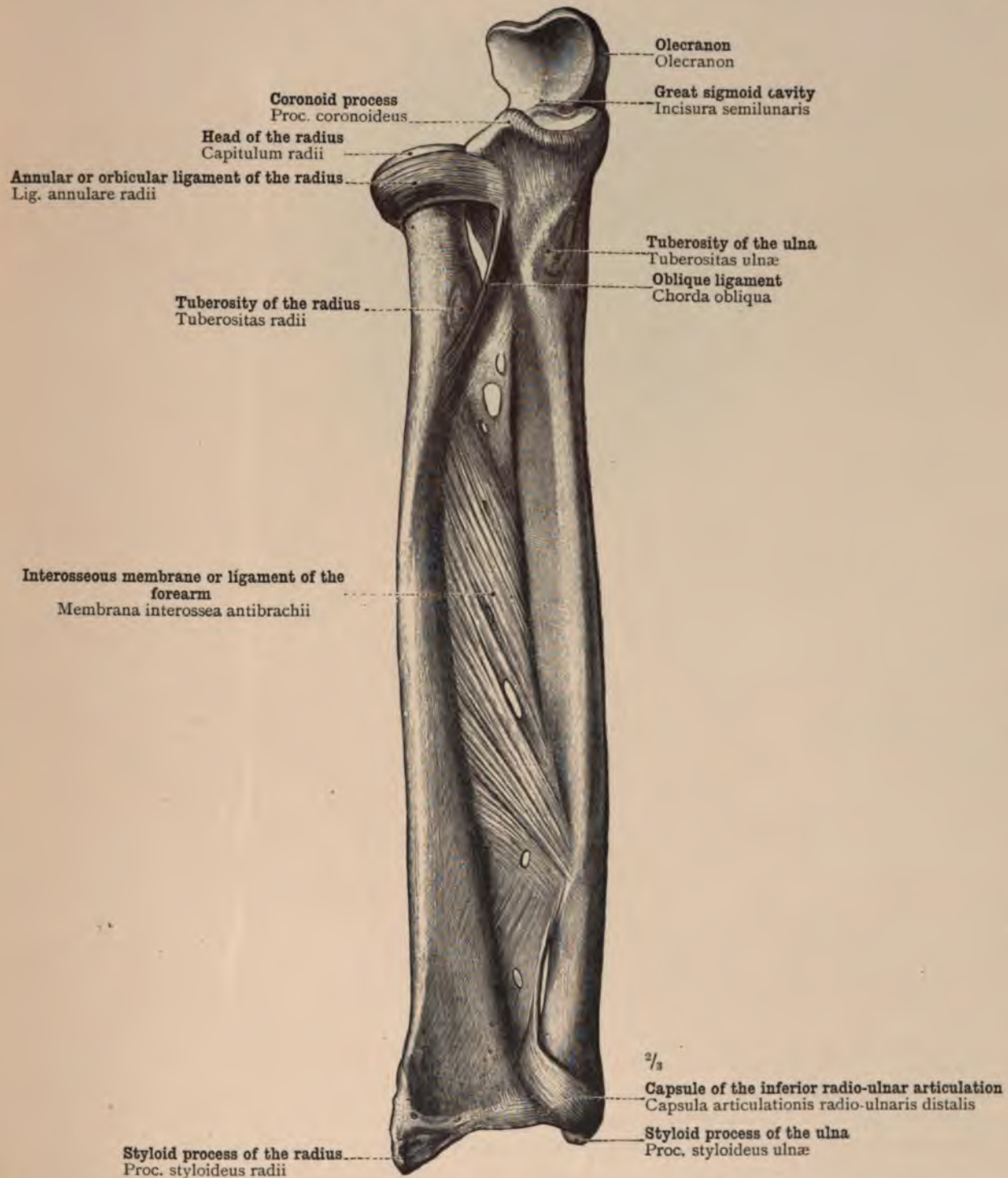


FIG. 442.—ARTICULATIONES RADIO-ULNARES, PROXIMALIS ET DISTALIS; RADIO-ULNAR ARTICULATIONS, SUPERIOR AND INFERIOR: LIGAMENTUM ANNULARE RADII, ANNULAR OR ORBICULAR LIGAMENT OF THE RADIUS; MEMBRANA INTEROSSEA ANTIBRACHII, INTEROSSEOUS MEMBRANE OR LIGAMENT OF THE FOREARM. (THE BONES OF THE RIGHT FOREARM WITH THE RADIO-ULNAR LIGAMENTS; ANTERIOR OR PALMAR ASPECT.)

Articulations of the Bones of the Forearm.



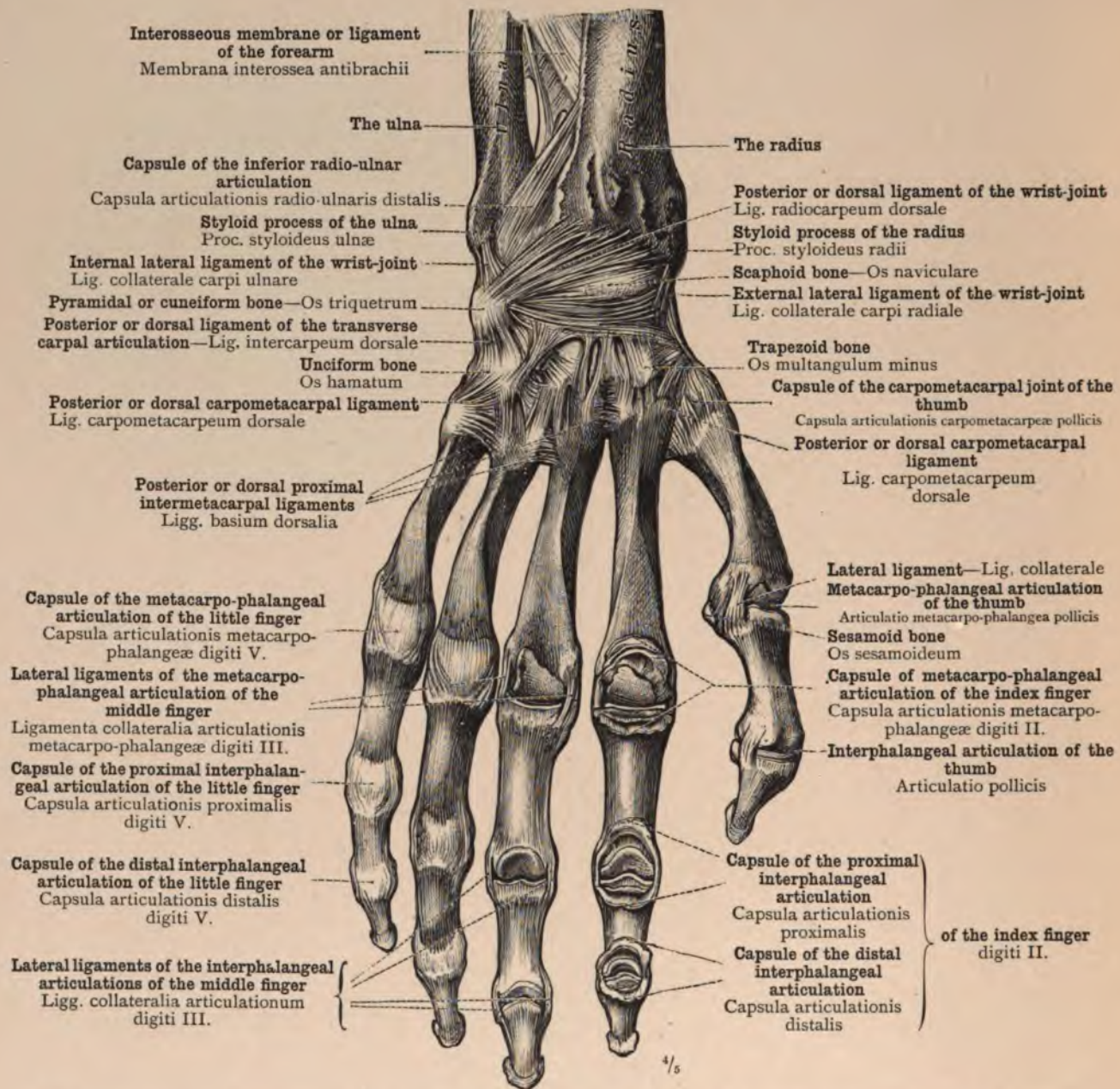
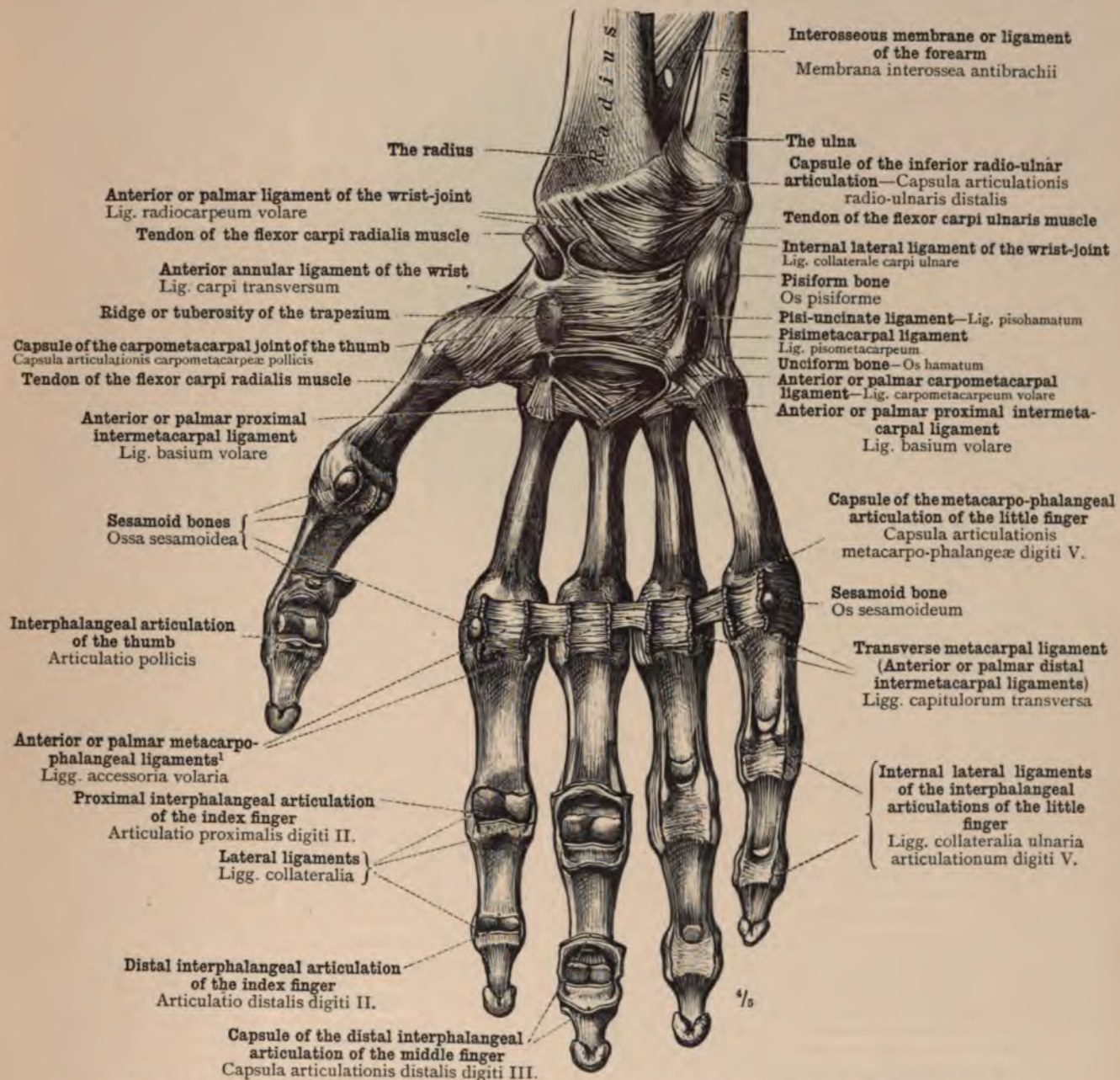


FIG. 443.—THE POSTERIOR OR DORSAL LIGAMENTS OF THE WRIST AND HAND: LIGAMENTA COLLATERALIA CARPI, LATERAL LIGAMENTS OF THE WRIST AND THE CARPUS; SUPERFICIAL POSTERIOR OR DORSAL LIGAMENTS OF CARPUS AND METACARPUS. THE CAPSULES AND THE LATERAL LIGAMENTS OF THE METACARPO-PHALANGEAL AND INTERPHALANGEAL ARTICULATIONS.

In the articulations of the index finger the posterior wall of the capsule has been divided transversely across the middle of the joint, and the ends have been turned upwards and downwards; in the articulations of the thumb and the middle finger the capsule has been divided only between the lateral ligaments, leaving these intact; in the articulations of the ring and little fingers the capsule has not been opened.

Articulationes manus et digitorum—Articulations of the hand and fingers.





<sup>1</sup> These are fibrous plates rather than ligaments properly so called, and, being thickened into fibrocartilage at each side along their attachments to the lateral metacarpo-phalangeal ligaments, they are grooved on the palmar surfaces for the flexor tendon. Macalister calls them *glenoid* ligaments. It is in the lateral fibrocartilaginous portions of these plates that the sesamoid bones of the metacarpo-phalangeal joint of the thumb, and occasionally of some of the other fingers, are developed.—Tr.

FIG. 444.—THE ANTERIOR OR PALMAR LIGAMENTS OF THE WRIST AND HAND: THE SUPERFICIAL LIGAMENTS OF THE CARPUS AND THE METACARPUS; THE CAPSULES AND LIGAMENTS OF THE METACARPO-PHALANGEAL AND THE INTERPHALANGEAL ARTICULATIONS. LIGAMENTUM CARPI TRANSVERSUM, ANTERIOR ANNULAR LIGAMENT OF THE WRIST; CANALIS CARPI, CANAL OF THE CARPUS BENEATH THE ANTERIOR ANNULAR LIGAMENT (FOR THE TRANSMISSION OF THE FLEXOR TENDONS). RELATIONS OF THE TENDONS OF THE FLEXOR CARPI ULNARIS AND FLEXOR CARPI RADIALIS MUSCLE TO THE ANTERIOR OR PALMAR CARPAL AND METACARPAL LIGAMENTS. LIGAMENTA ACCESSORIA VOLARIA, ANTERIOR OR PALMAR METACARPO-PHALANGEAL LIGAMENTS; LIGAMENTA CAPITULORUM TRANSVERSA, TRANSVERSE METACARPAL LIGAMENT (ANTERIOR OR PALMAR DISTAL INTERMETACARPAL LIGAMENTS). OSSA SESAMOIDEA, SESAMOID BONES.

In the interphalangeal articulations of the index finger the anterior portions of the capsules between the lateral ligaments have been entirely cut away; in those of the middle finger the capsules have been divided transversely across the middle of the joint and the divided halves of the anterior ligament turned upwards and downwards; in the interphalangeal articulation of the thumb the anterior portion of the capsule has been divided along its attachment to the distal phalanx and the lateral ligaments, and, together with the sesamoid bones embedded in it on each side, has been turned upwards; in the remaining joints the capsule has been left intact.

Articulationes manus et digitorum—Articulations of the hand and fingers.



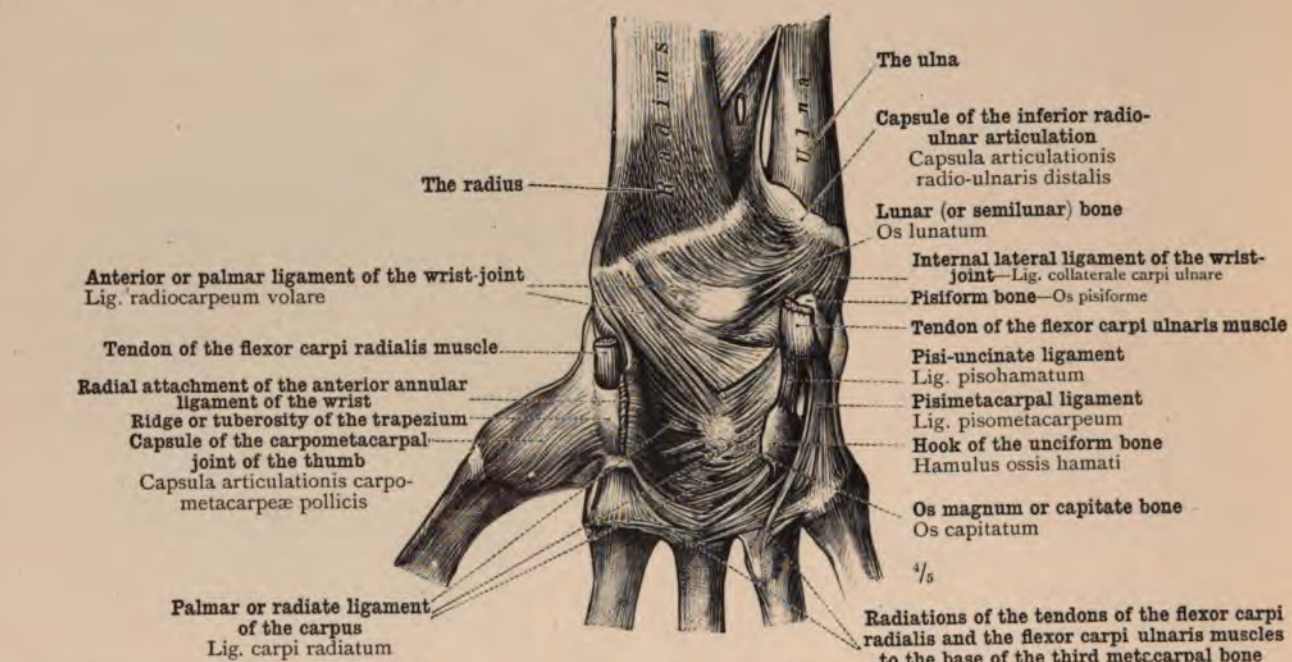


FIG. 445.—THE ANTERIOR OR PALMAR LIGAMENTS OF THE RIGHT CARPUS, SHOWN BY THE REMOVAL OF THE ANTERIOR ANNULAR LIGAMENT OF THE WRIST: LIGAMENTUM RADIOCARPEUM VOLARE, ANTERIOR OR PALMAR LIGAMENT OF THE WRIST-JOINT; LIGAMENTUM CARPI RADIATUM, ANTERIOR OR RADIATE LIGAMENT OF THE CARPUS.

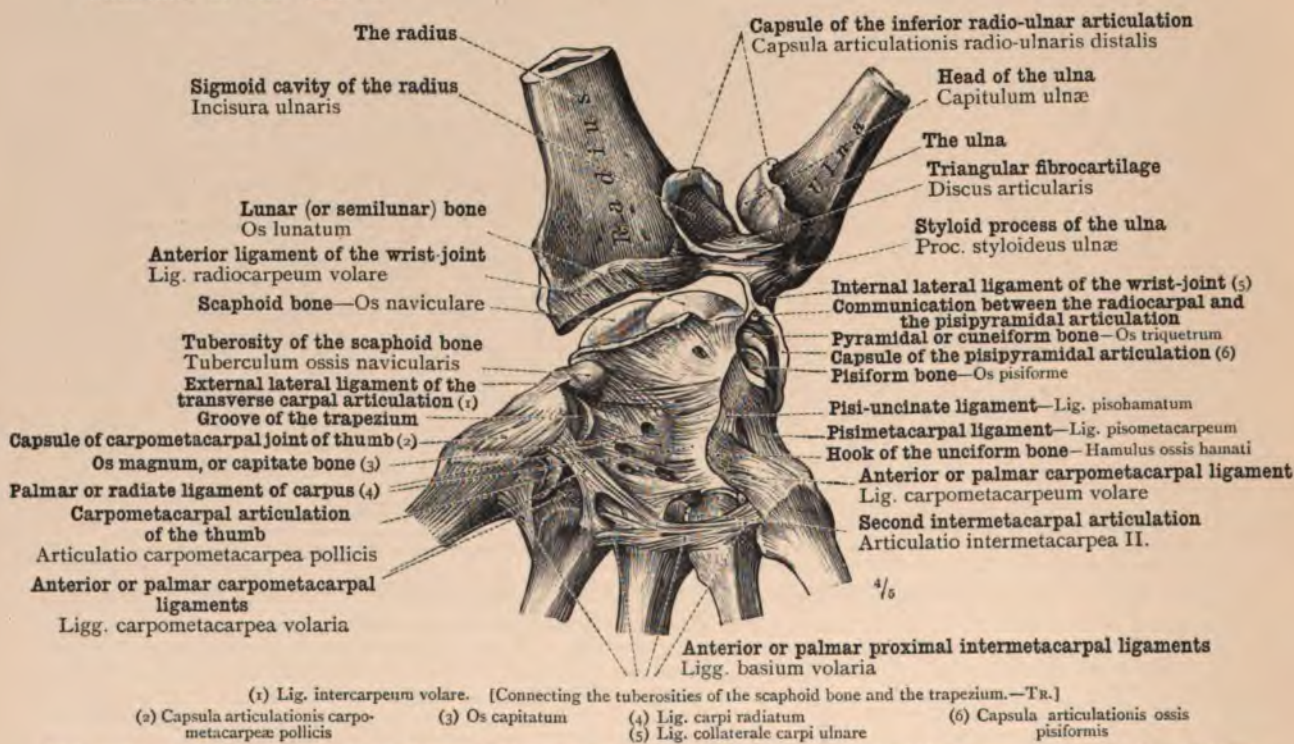


FIG. 446.—THE ANTERIOR OR PALMAR LIGAMENTS OF THE INTERCARPAL (TRANSVERSE CARPAL) AND CARPO-METACARPAL ARTICULATIONS, AFTER THE ANTERIOR ANNULAR LIGAMENT OF THE WRIST AND THE TENDONS OF THE FLEXOR CARPI RADIALIS AND FLEXOR CARPI ULNARIS HAVE BEEN ENTIRELY REMOVED.

The radiocarpal and distal radio-ulnar articulations have been opened, the triangular fibrocartilage and the internal lateral ligament of the wrist-joint being left intact; the bones of the forearm have been separated from one another and from the carpus; the pisipyrimal articulation, the carpometacarpal articulations of the thumb and the ring finger, and the second intermetacarpal articulation, have been partially opened.

Articulatio manus—Articulations of the hand.



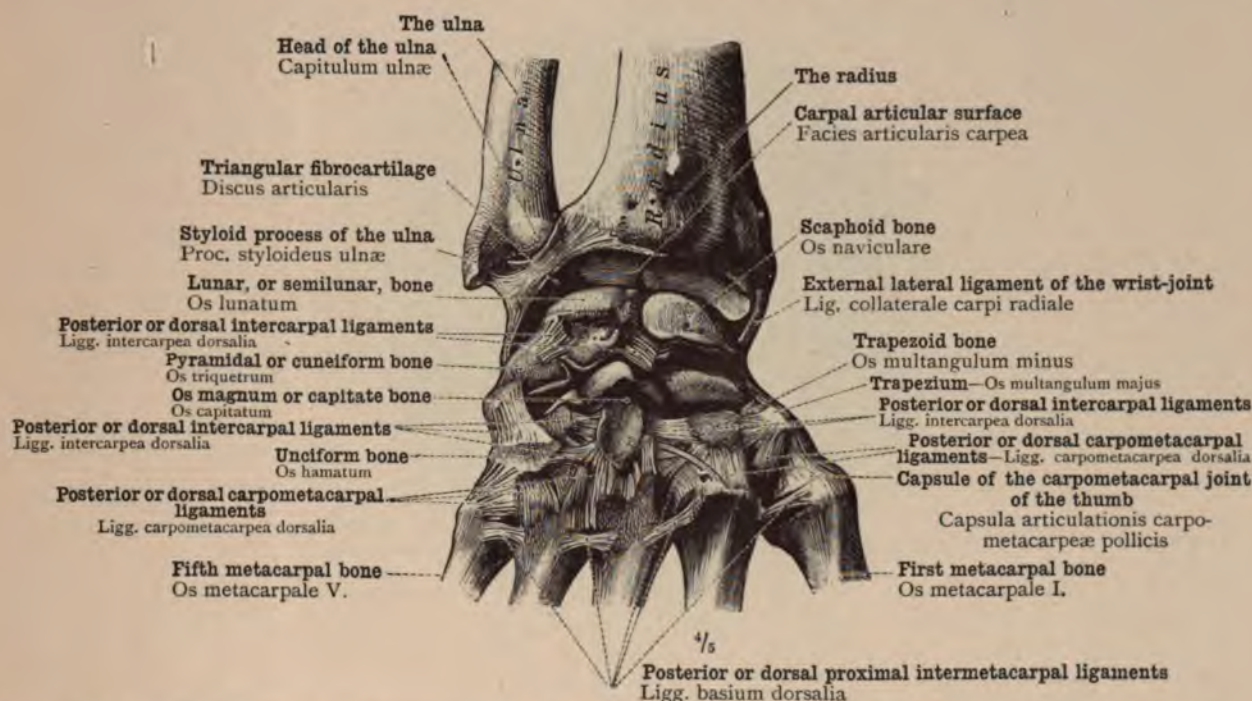


FIG. 447.—THE SHORT POSTERIOR OR DORSAL LIGAMENTS OF THE TRANSVERSE CARPAL ARTICULATION, AND OF THE CARPOMETACARPAL AND INTERMETACARPAL ARTICULATIONS. (THE RIGHT CARPUS WITH THE DISTAL EXTREMITIES OF THE BONES OF THE FOREARM AND THE PROXIMAL EXTREMITIES OF THE METACARPAL BONES.)

The distal radio-ulnar articulation and the radiocarpal and transverse carpal articulations have been opened by the removal of the posterior ligaments, and the bones of the forearm have been drawn a little upwards and away from the carpus.

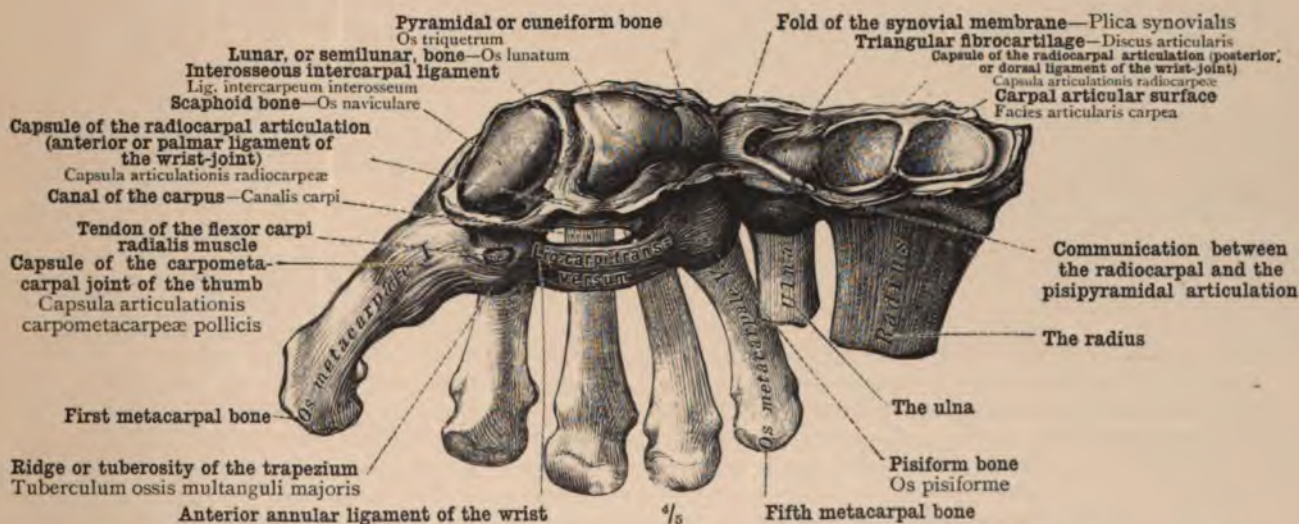


FIG. 448.—THE ARTICULAR SURFACES AND THE ATTACHMENTS OF THE CAPSULE OF THE RADIOCARPAL ARTICULATION OR WRIST-JOINT; CANALIS CARPI, THE CANAL OF THE CARPUS. (THE RIGHT CARPUS WITH THE METACARPAL BONES; ANTERO-SUPERIOR ASPECT.)

The distal extremities of the bones of the forearm have been turned to the ulnar side, after division of the capsule of the wrist-joint with the exception of the internal lateral ligament.

#### Articulatio manus—Articulations of the hand.



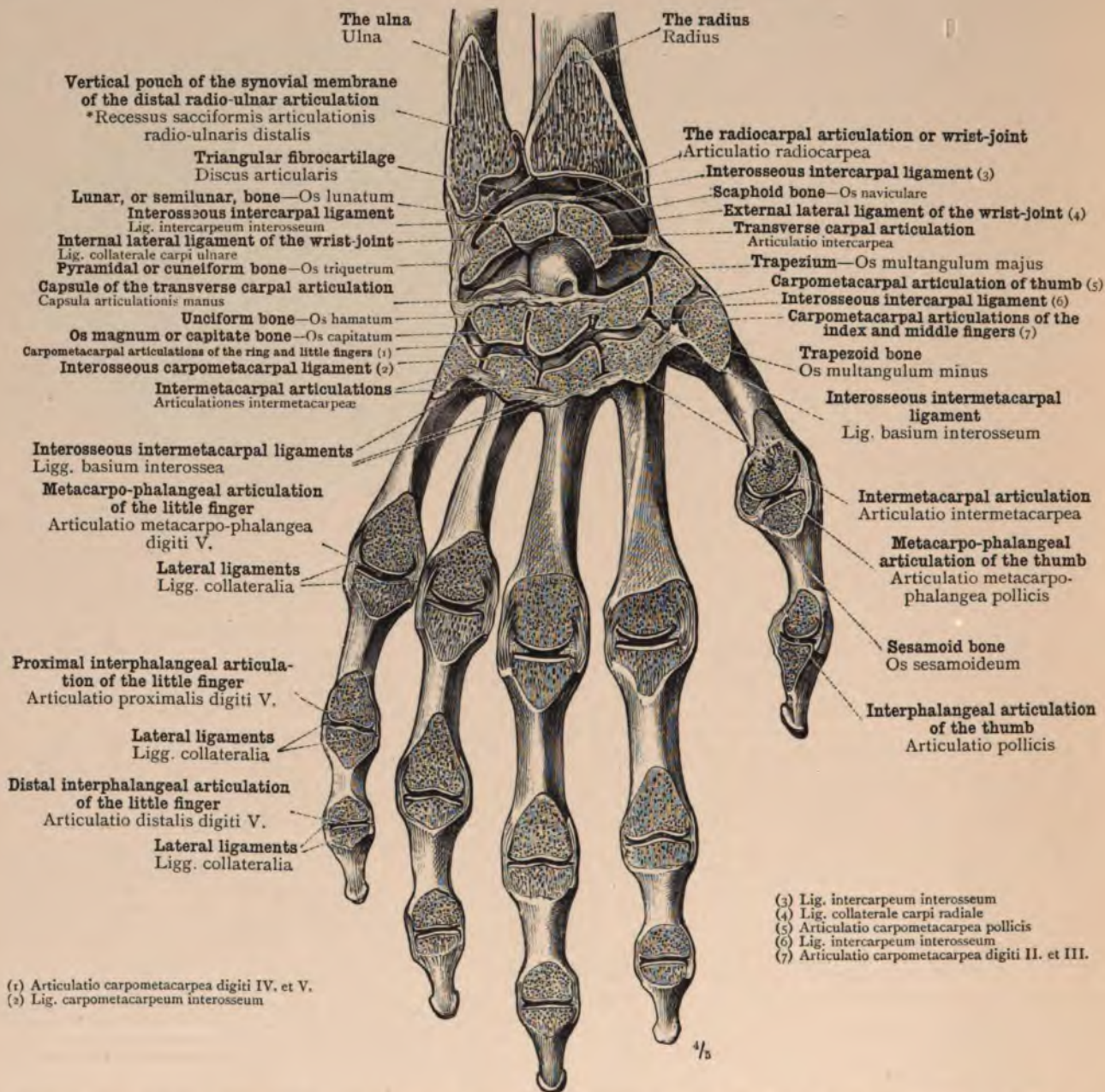


FIG. 449.—ARTICULATIO RADIO-ULNARIS DISTALIS, DISTAL RADIO-ULNAR ARTICULATION. ARTICULATIO MANUS, ARTICULATIONS OF THE HAND: ARTICULATIONES RADIOCARPEA ET INTERCARPEA, RADIOCARPAL ARTICULATION OR WRIST-JOINT AND TRANSVERSE CARPAL ARTICULATION. ARTICULATIONES CARPOMETACARPEÆ, CARPOMETACARPAL ARTICULATIONS; ARTICULATIONES INTERMETACARPEÆ, INTERMETACARPAL ARTICULATIONS. ARTICULATIONES METACARPO-PHALANGEÆ, METACARPO-PHALANGEAL ARTICULATIONS; ARTICULATIONES DIGITORUM MANUS, INTERPHALANGEAL ARTICULATIONS OF THE FINGERS. (THE SKELETON OF THE RIGHT HAND WITH THE DISTAL EXTREMITIES OF THE BONES OF THE FOREARM; POSTERIOR OR DORSAL ASPECT.)

The articulations are all opened by a section in the frontal plane: and whereas in the fingers this plane passes through the joints from side to side, dividing the lateral ligaments; in the thumb, owing to the opposition of this member, the plane of section passes through the joints in a dorsopalmar direction, and divides the dorsal and palmar ligaments.

Articulationes manus et digitorum—Articulations of the hand and fingers.





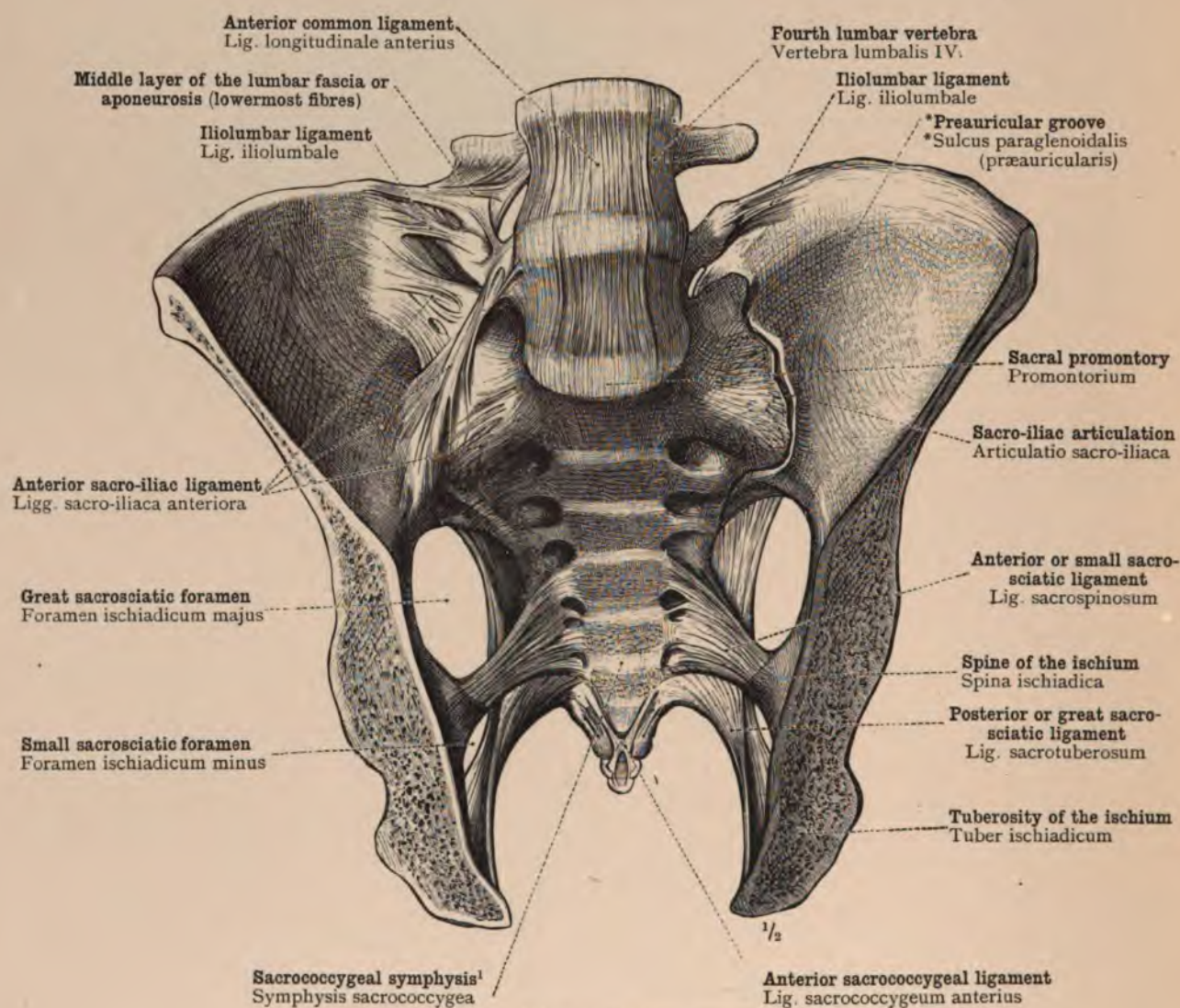
<sup>1</sup> See note on p. 211.

FIG. 450.—THE ARTICULATIONS OF THE HAND, SEEN IN SAGITTAL OR DORSOPALMAR SECTION, SHOWING THEIR RELATIONS TO THE EPIPHYSIAL DISCS. (THE RADIAL PORTION OF THE DIVIDED RIGHT HAND OF A YOUTH AGED SEVENTEEN YEARS.)

The section traverses the distal extremity of the radius, the carpus, and the metacarpal bone and phalanges of the middle finger.

Articulationes manus et digitorum—Articulations of the hand and fingers.





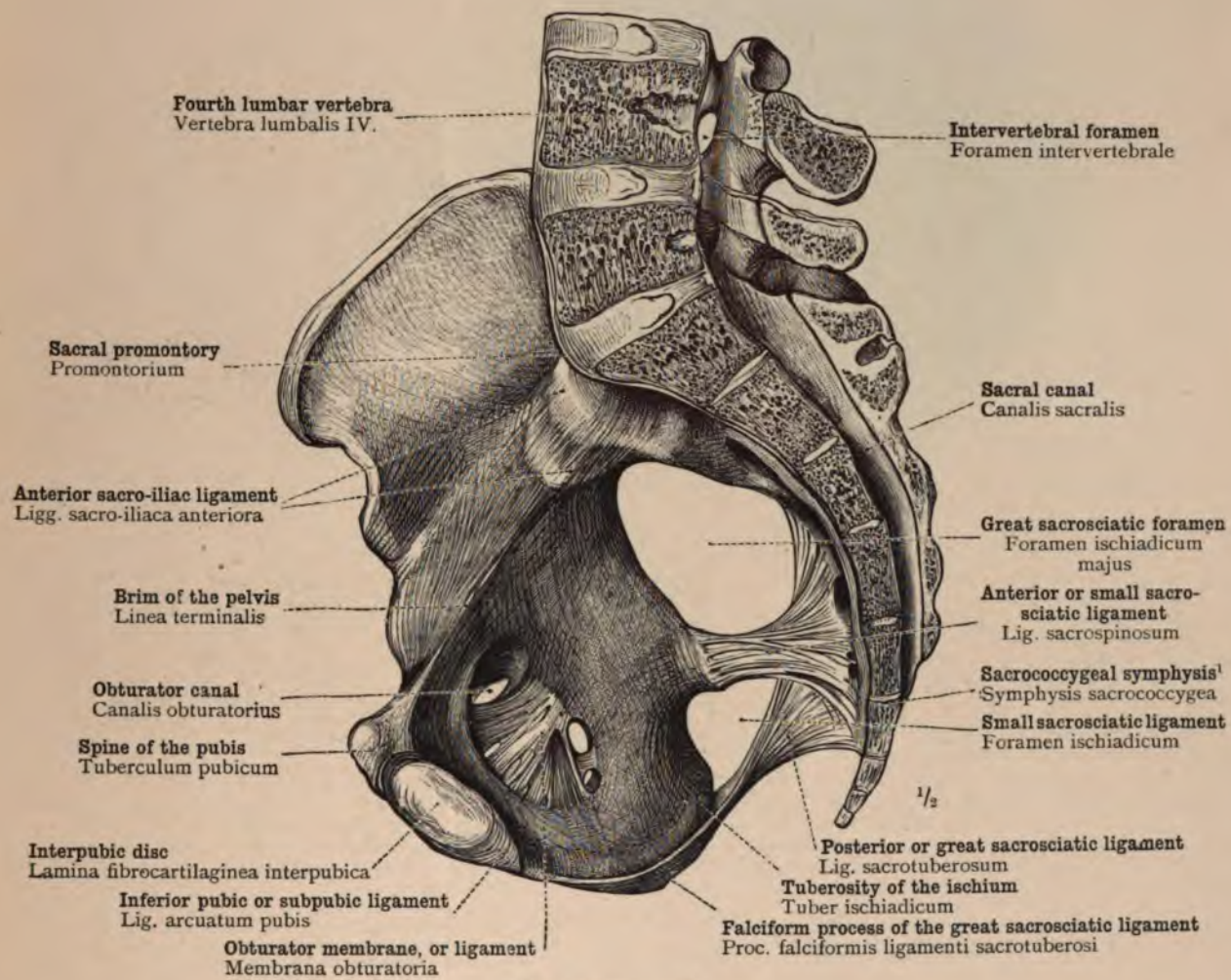
<sup>1</sup> Intervertebral disc of the sacrococcygeal articulation.—Tr.

FIG. 451.—ARTICULATIO SACRO-ILIACA, SACRO-ILIAC ARTICULATION: LIGAMENTA SACRO-ILIACA ANTERIORA, ANTERIOR SACRO-ILIAC LIGAMENT; LIGAMENTUM ILIOLUMBALE, ILIOLUMBAR LIGAMENT. LIGAMENTA SACROSPINOSUM ET SACROTUBEROSUM, SMALL OR ANTERIOR AND GREAT OR POSTERIOR SACROSCIATIC LIGAMENTS. FORAMINA ISCHIADICA MAJUS ET MINUS, GREAT AND SMALL SACROSCIATIC FORAMINA. (THE PELVIS WITH THE FOURTH AND FIFTH LUMBAR VERTEBRÆ, IN FRONTAL SECTION; POSTERIOR HALF, SEEN FROM BEFORE.)

The ligaments of the right sacro-iliac articulation are intact; those of the left articulation have been removed.

Articulationes et ligamenta cinguli extremitatis interioris—Articulations and ligaments of the pelvic girdle.



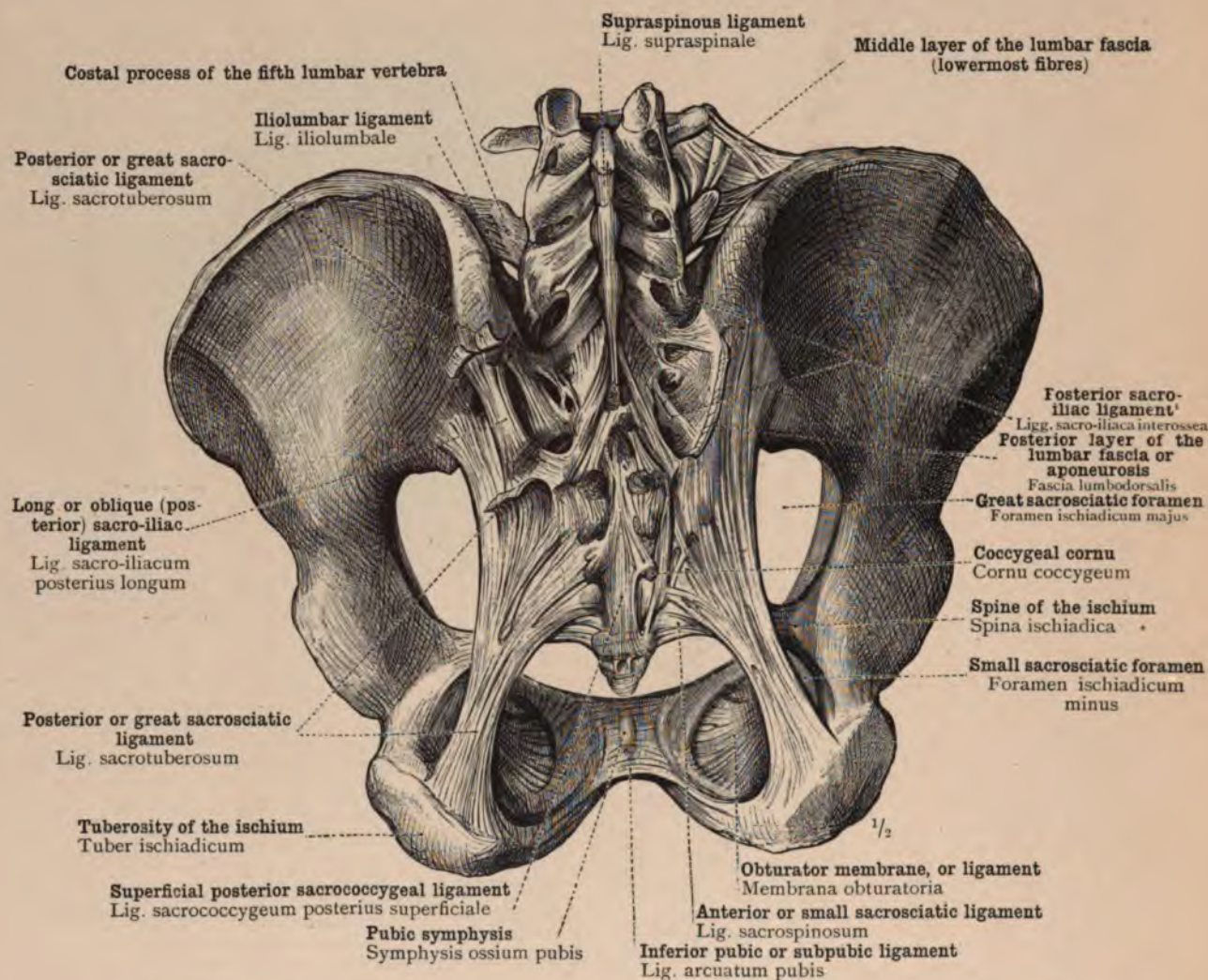


<sup>1</sup> See note on p. 216.

FIG. 452.—LIGAMENTA SACROTUBEROSUM ET SACROSPINOSUM, POSTERIOR OR GREAT AND ANTERIOR OR SMALL SACROSCIATIC LIGAMENTS; FORAMINA ISCHIADICA, SACROSCIATIC FORAMINA. MEMBRANA OBTURATORIA, OBTURATOR MEMBRANE OR LIGAMENT; CANALIS OBTURATORIUS, OBTURATOR CANAL. ARTICULATIO SACRO-ILIACA, SACRO-ILIAC ARTICULATION. (THE RIGHT HALF OF A PELVIS DIVIDED IN THE MEDIAN PLANE; SEEN FROM THE INNER SIDE)

Articulationes et ligamenta cinguli extremitatis inferioris—Articulations and ligaments of the pelvic girdle.





<sup>1</sup> Macalister and some other English anatomists agree with Toldt in naming this ligament the *interosseous* sacro-iliac ligament. That name is, however, misapplied, since the fibres of the ligament do not connect two closely adjacent parallel articular surfaces. True interosseous fine fibres are occasionally found connecting corresponding parts of the auricular surfaces of the sacrum and the ilium.—TR.

FIG. 453.—POSTERIOR LIGAMENTS OF THE PELVIC GIRDLE: LIGAMENTUM SACROTUBEROSUM, POSTERIOR OR GREAT SACROSCIATIC LIGAMENT, AND ITS RELATION TO THE POSTERIOR LAYER OF THE LUMBAR APONEUROSIS. FORAMINA ISCHIADICA, SACROSCIATIC FORAMINA. LIGAMENTUM SACRO-ILIACUM POSTERIUS LONGUM, LONG OR OBLIQUE (POSTERIOR) SACRO-ILIAC LIGAMENT; LIGAMENTA SACRO-ILIAC INTEROSSEA, POSTERIOR SACRO-ILIAC LIGAMENT (see note above); LIGAMENTUM ILIOLUMBALE, ILIOLUMBAR LIGAMENT. (THE PELVIS WITH THE FOURTH AND FIFTH LUMBAR VERTEBRÆ; SEEN FROM BEHIND.)

On the right side, the posterior layer of the lumbar aponeurosis has been divided close to its continuation into the posterior or great sacrosciatic ligament, and turned outwards; on the left side, this superficial portion of the posterior or great sacrosciatic ligament has been cut across, and the divided ends have been turned upwards and downwards. The lowermost fibres of the middle layer of the lumbar aponeurosis have on the right side been left intact, but on the left side entirely removed.

Articulationes et ligamenta cinguli extremitatis inferioris—Articulations and ligaments of the pelvic girdle.



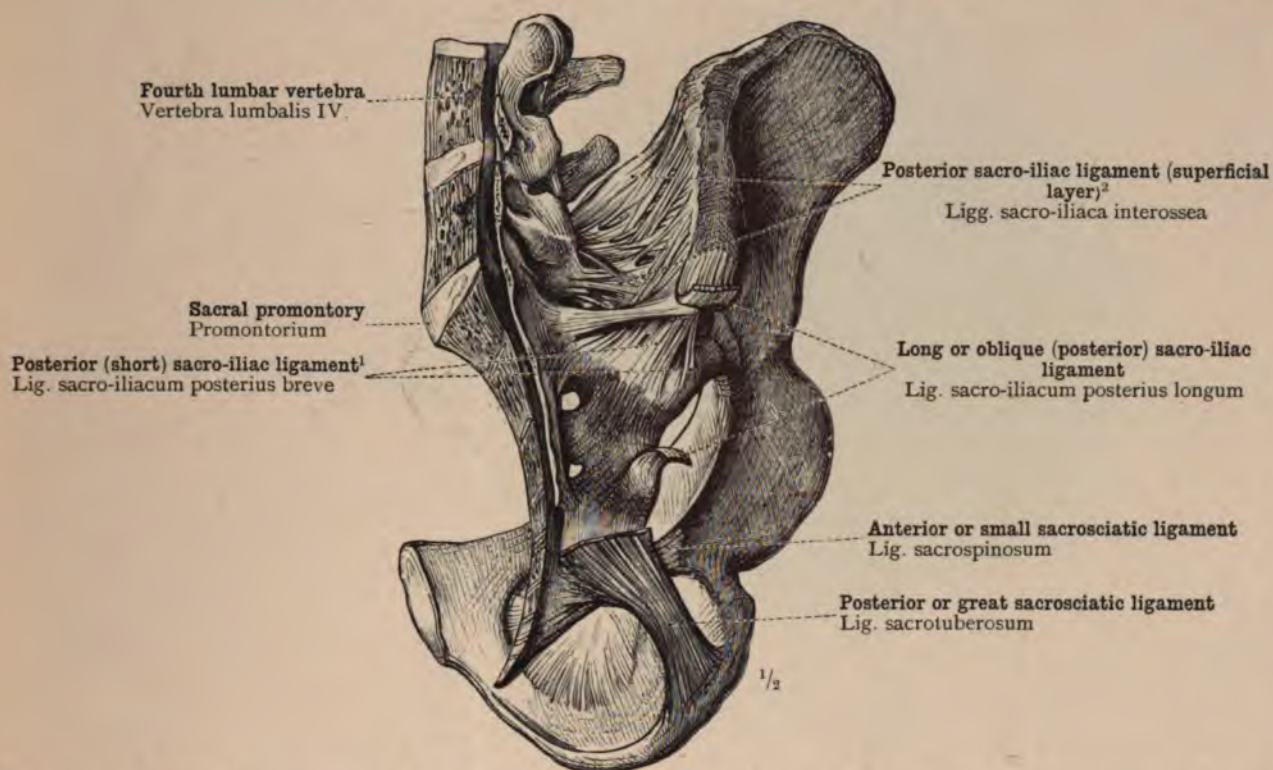


FIG. 454.—DEEP POSTERIOR LIGAMENTS OF THE SACRO-ILIAC ARTICULATION: LIGAMENTA SACRO-ILIACA INTEROSSEA, POSTERIOR SACRO-ILIAC LIGAMENTS; LIGAMENTUM SACRO-ILIACUM POSTERIUS BREVE, POSTERIOR (SHORT) SACRO-ILIAC LIGAMENT. (THE RIGHT HALF OF A PELVIS DIVIDED IN THE MEDIAN PLANE; POSTERO-INTERNAL ASPECT.)

The upper portion of the posterior or great sacrospinous ligament has been removed; the long or oblique (posterior) sacro-iliac ligament has been divided transversely in the middle, and the ends have been turned upwards and downwards.

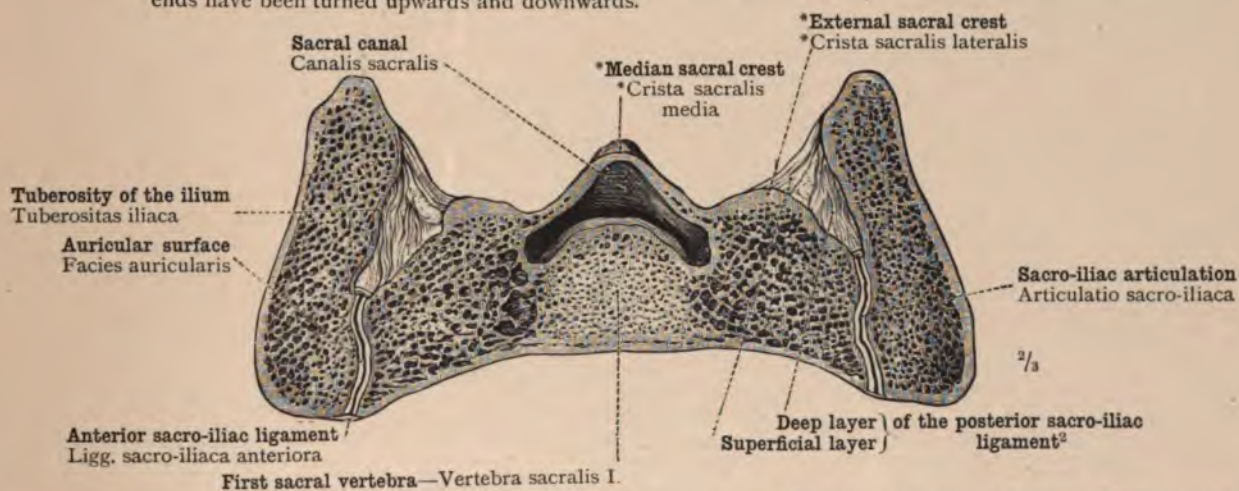


FIG. 455.—HORIZONTAL SECTION THROUGH THE SACRO-ILIAC ARTICULATION; UPPER SURFACE OF LOWER SEGMENT: SUPERFICIAL AND DEEP LAYERS OF THE POSTERIOR SACRO-ILIAC LIGAMENT.

The section was made in a plane at right angles to the long axis of the pelvis, and passes through the middle of the body of the first sacral vertebra.

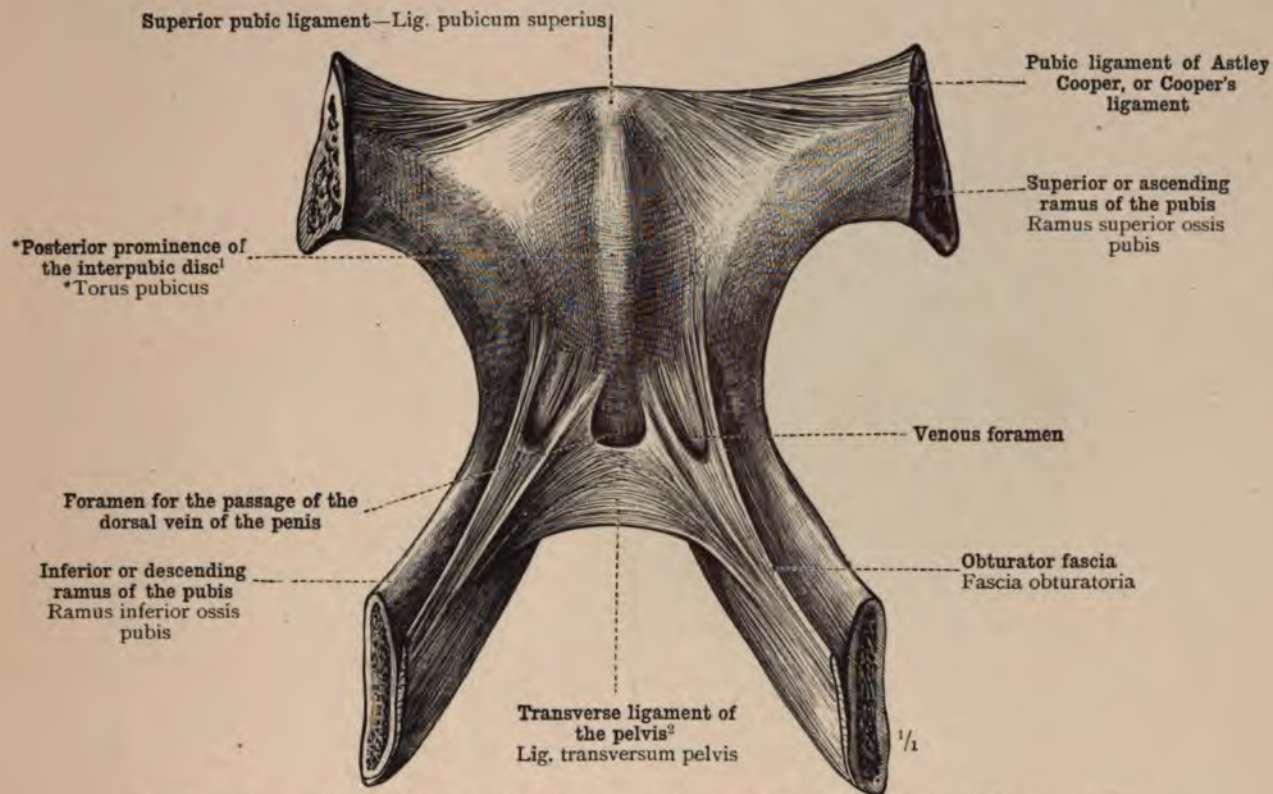
<sup>1</sup> This forms part of the posterior sacro-iliac ligament of English anatomists. See note on p. 218.—Tr. <sup>2</sup> See note on p. 218.

Articulationes et ligamenta cinguli extremitatis inferioris—Articulations and ligaments of the pelvic girdle.









<sup>1</sup> The slight posterior prominence of the interpubic disc has not received any name from English anatomists. A few transverse fibres connect the pubic bones in this region, forming the *posterior pubic ligament*, which is not mentioned by Toldt.—Tr.

<sup>2</sup> See note <sup>2</sup> on p. 220.

FIG. 458.—SYMPHYSIS OSSIUM PUBIS, PUBIC SYMPHYSIS: TORUS PUBICUS, POSTERIOR PROMINENCE OF THE INTERPUBIC DISC; LIGAMENTUM TRANSVERSUM PELVIS, TRANSVERSE LIGAMENT OF THE PELVIS (see note <sup>2</sup> above), WITH THE VENOUS FORAMINA; CONNEXIONS OF THE TRANSVERSE LIGAMENT OF THE PELVIS WITH THE OBTURATOR FASCIA. (THE PUBIC SYMPHYSIS SEEN FROM BEHIND.)

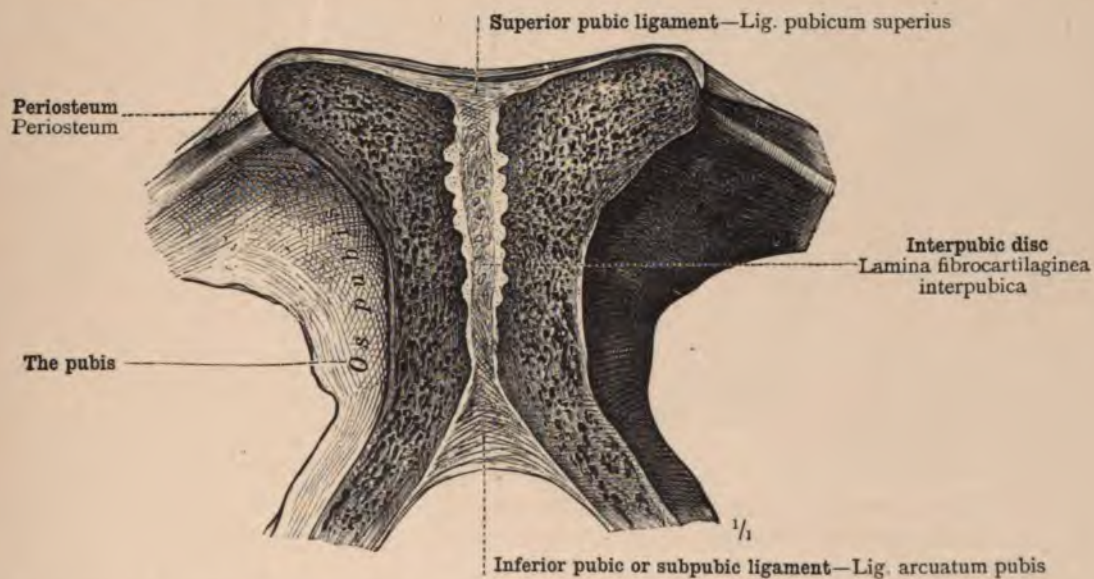


FIG. 459.—SYMPHYSIS OSSIUM PUBIS, PUBIC SYMPHYSIS: LAMINA FIBROCARILAGINEA INTERPUBICA, INTERPUBIC DISC; LIGAMENTUM PUBICUM SUPERIUS, SUPERIOR PUBIC LIGAMENT; LIGAMENTUM ARCUATUM PUBIS, INFERIOR PUBIC OR SUBPUBIC LIGAMENT. (THE PUBIC SYMPHYSIS IN FRONTAL SECTION; ANTERIOR SURFACE OF POSTERIOR SEGMENT.)

Symphysis ossium pubis—Pubic symphysis.



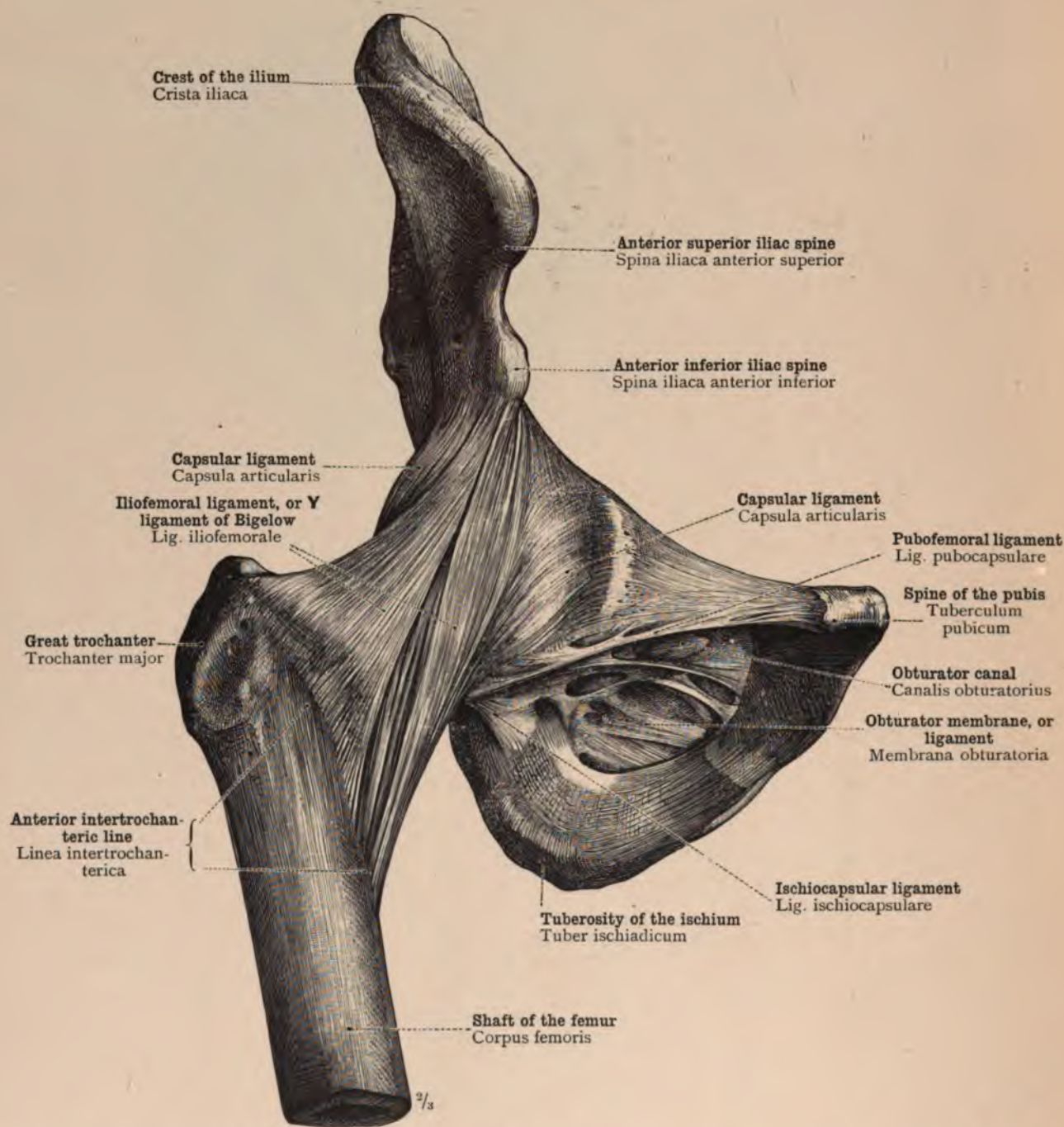


FIG. 460.—ARTICULATIO COXÆ, THE HIP-JOINT: LIGAMENTUM ILIOFEMORALE, ILIOFEMORAL LIGAMENT, OR Y LIGAMENT OF BIGELOW; LIGAMENTUM PUBOCAPSULARE, PUBOFEMORAL LIGAMENT, AND ITS RELATIONS TO THE OBTURATOR MEMBRANE. (THE RIGHT HIP-JOINT, SEEN FROM BEFORE.)

Articulatio coxæ—The hip-joint.



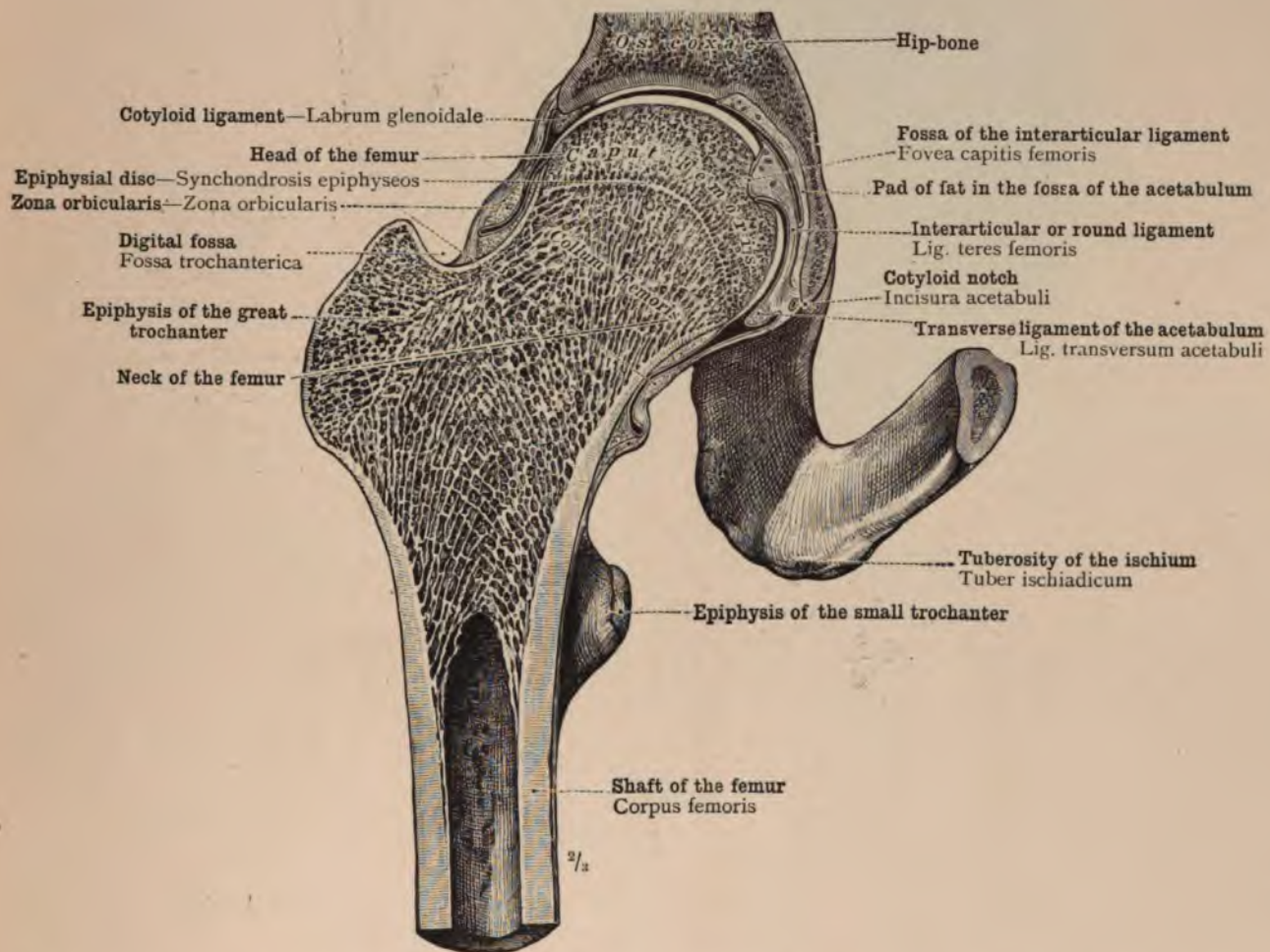


FIG. 461.—ARTICULATIO COXÆ, THE HIP-JOINT: CAPSULA ARTICULARIS, CAPSULAR LIGAMENT; ZONA ORBICULARIS, THE CIRCULARLY DISPOSED FIBRES OF THE CAPSULAR LIGAMENT, FORMING A BAND ROUND THE NECK OF THE FEMUR, WHICH IS MOST DISTINCT BEHIND AND BELOW. RELATION OF THE EPIPHYSIAL DISC OF THE HEAD OF THE FEMUR TO THE HIP-JOINT. (THE RIGHT HIP-JOINT IN FRONTAL SECTION; ANTERIOR SURFACE OF POSTERIOR SEGMENT.)

The section passes through the middle of the cotyloid notch and of the fossa of the interarticular ligament.

Articulatio coxæ—The hip-joint.



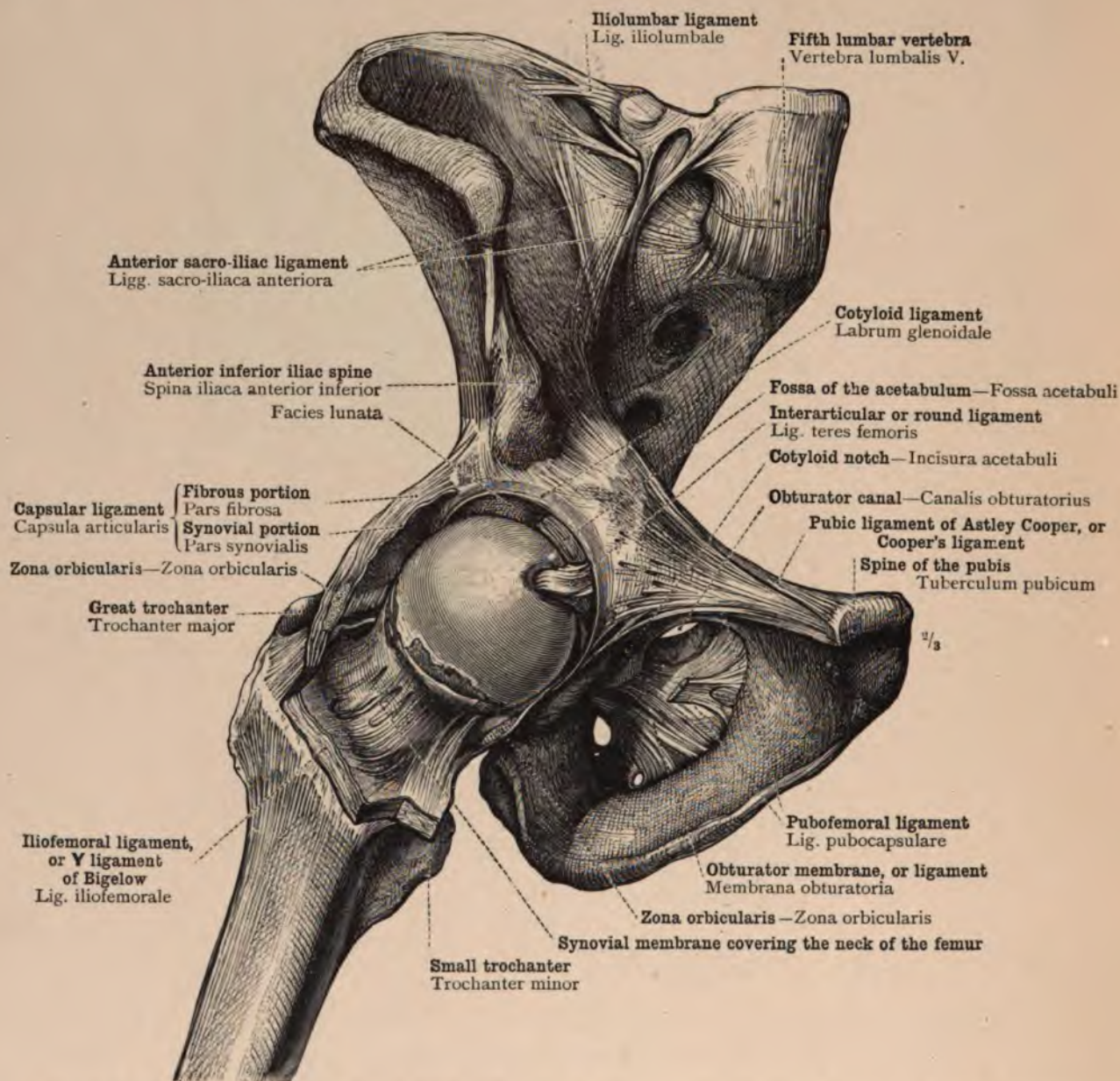


FIG. 462.—ARTICULATIO COXÆ, THE HIP-JOINT; LIGAMENTUM TERES FEMORIS, INTERARTICULAR OR ROUND LIGAMENT OF THE HIP-JOINT<sup>1</sup>; LABRUM GLENOIDALE, COTYLOID LIGAMENT; CAPSULA ARTICULARIS, CAPSULAR LIGAMENT OF THE HIP-JOINT; REFLECTION OF THE SYNOVIAL MEMBRANE OF THE HIP-JOINT FROM THE INNER SURFACE OF THE CAPSULAR LIGAMENT ON TO THE NECK OF THE FEMUR; ZONA ORBICULARIS, CIRCULAR BAND OF THE CAPSULAR LIGAMENT ROUND THE NECK OF THE FEMUR.<sup>2</sup> (THE RIGHT HIP-JOINT SEEN FROM BEFORE.)

The anterior wall of the capsular ligament has been removed, except for a narrow band at its distal attachment, which has been turned outwards. The head of the femur has been slightly withdrawn from its socket in a downward and outward direction.

<sup>1</sup> Perhaps most frequently known in England by its Latin name, *ligamentum teres*.

<sup>2</sup> Also frequently known in England by its Latin name, *zona orbicularis*.

Articulatio coxæ.—The hip-joint.



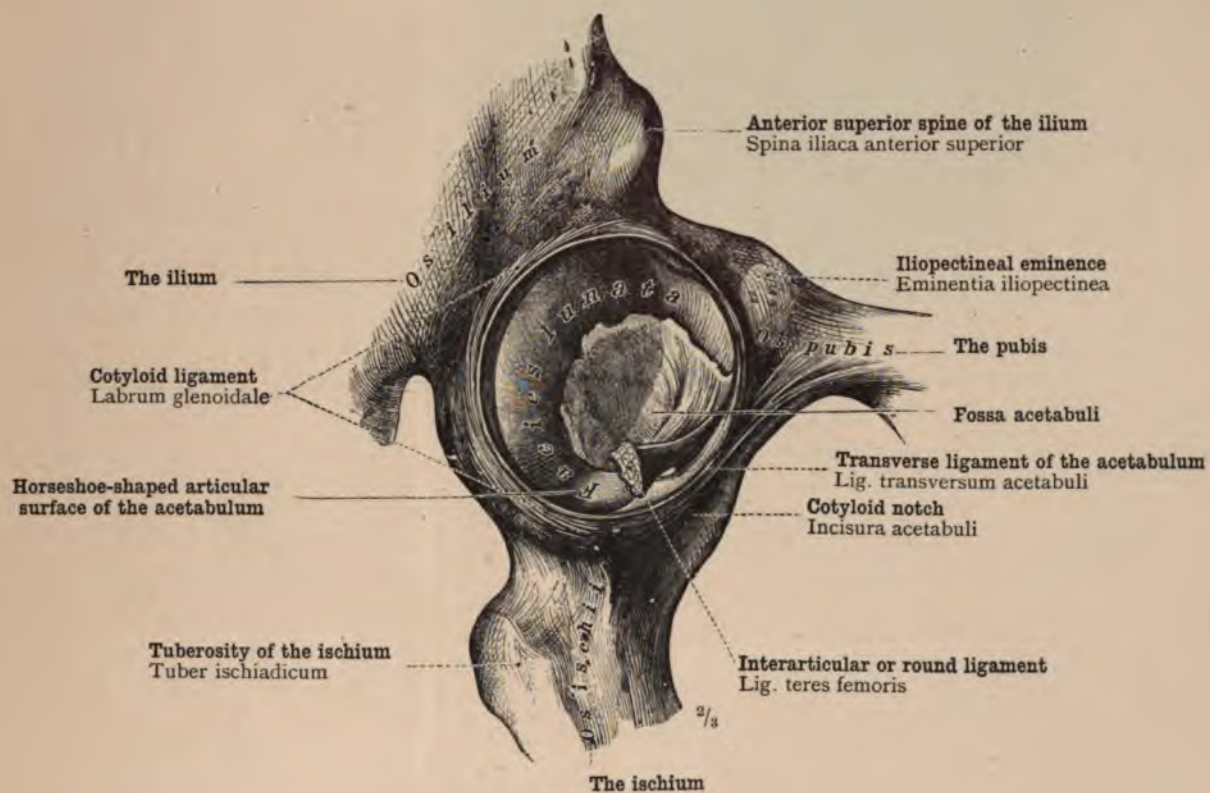


FIG. 463.—ARTICULATIO COXÆ, THE HIP-JOINT: THE ACETABULUM; LABRUM GLENOIDALE ET LIGAMENTUM TRANSVERSUM ACETABULI, THE COTYLOID LIGAMENT AND THE TRANSVERSE LIGAMENT OF THE ACETABULUM. LIGAMENTUM TERES FEMORIS, THE INTERARTICULAR OR ROUND LIGAMENT. (VIEW OF THE INTERIOR OF THE SOCKET OF THE RIGHT HIP-JOINT.)

The interarticular or round ligament has been divided close to its attachment to the head of the femur.

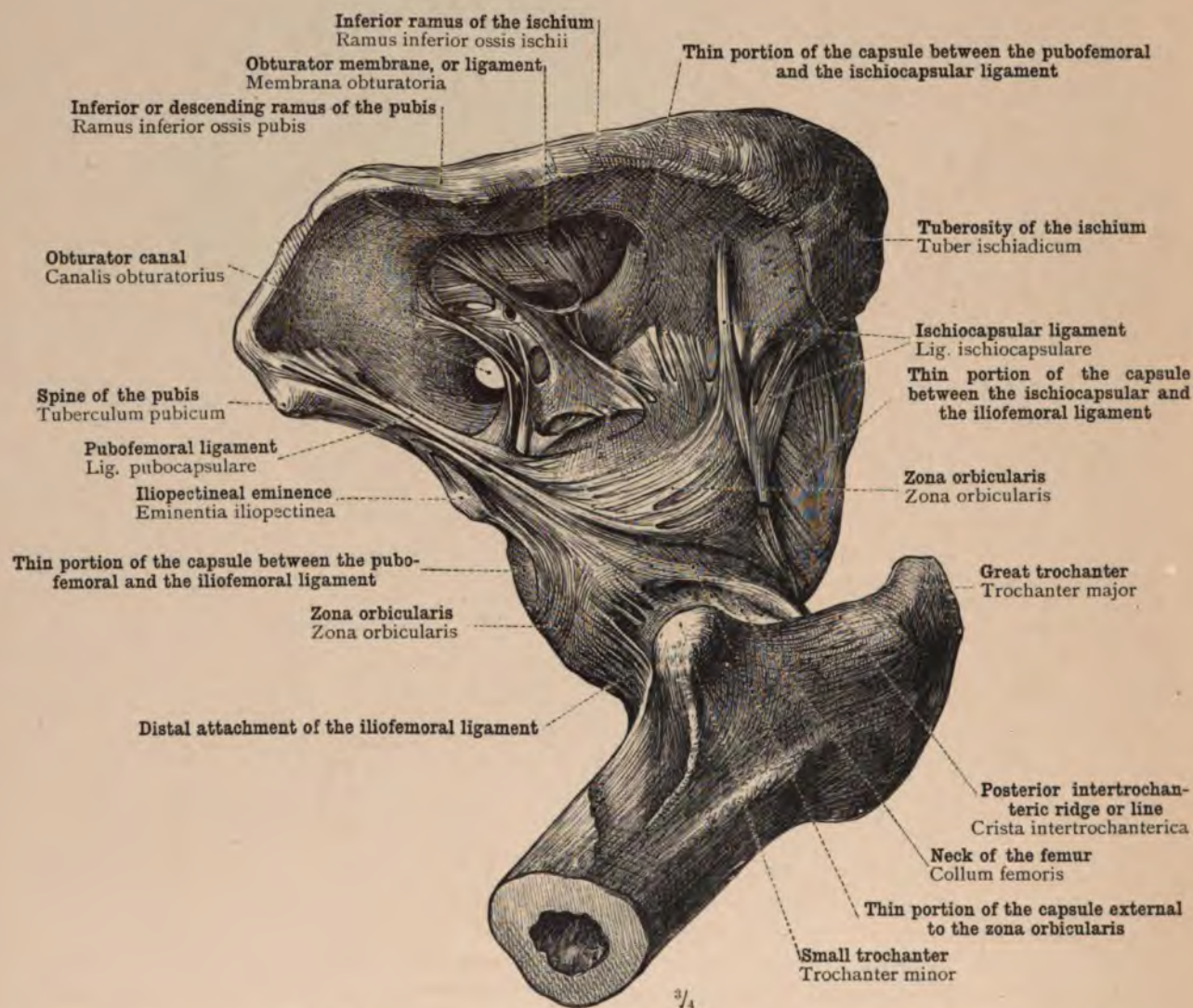


FIG. 464.—ARTICULATIO COXÆ, THE HIP-JOINT: CAPSULA ARTICULARIS, THE CAPSULAR LIGAMENT; ZONA ORBICULARIS (see p. 223), AND ITS RELATIONS TO THE PUBOFEMORAL AND ISCHIOCAPSULAR LIGAMENTS. MEMBRANA OBTURATORIA ET CANALIS OBTURATORIUS, OBTURATOR MEMBRANE OR LIGAMENT AND OBTURATOR CANAL. (THE POSTERO-INTERNAL SIDE OF THE RIGHT HIP-JOINT SEEN FROM BELOW.)

The articular cavity has been injected with tallow.

Articulatio coxæ—The hip-joint.



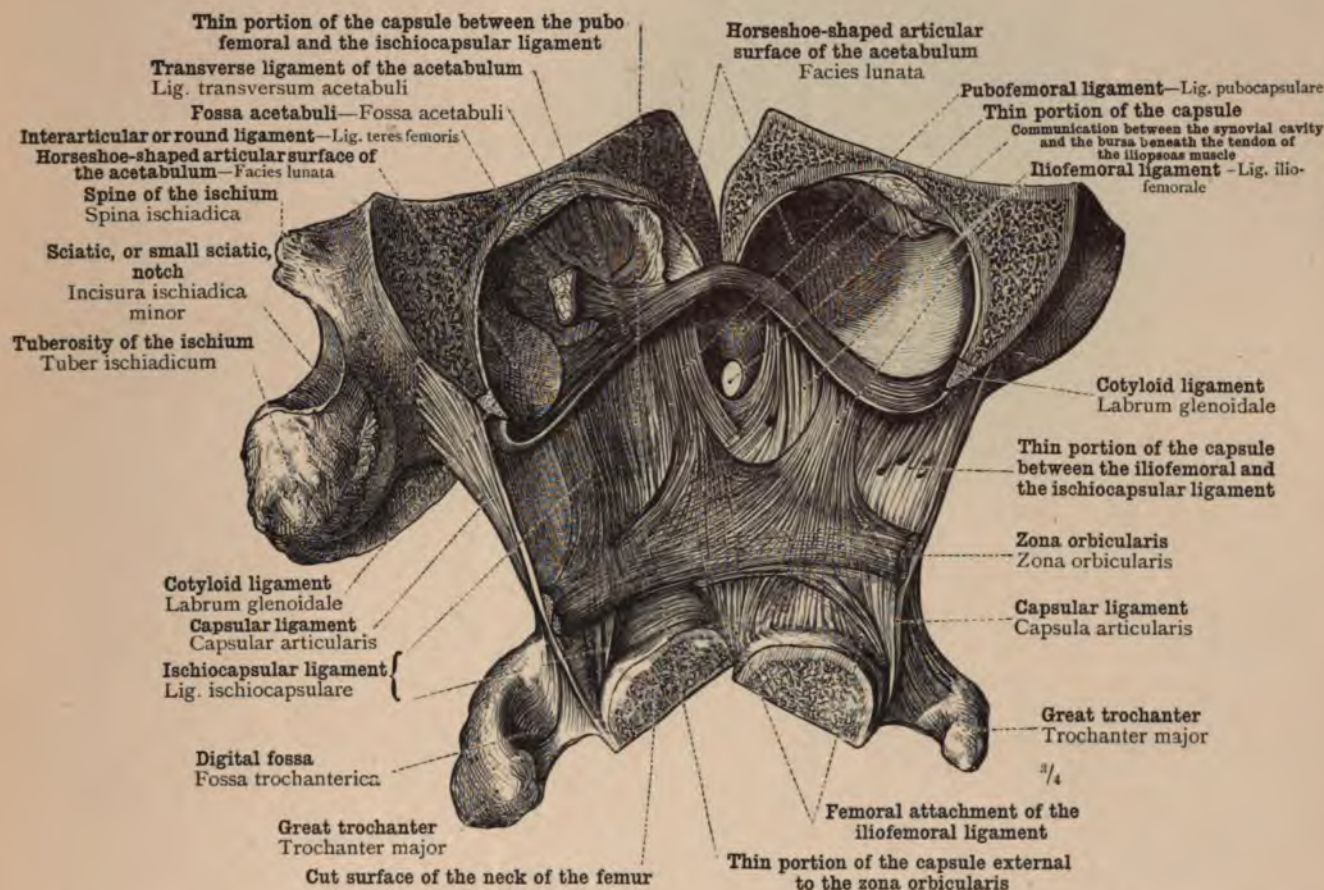


FIG. 465.—ARTICULATIO COXÆ, THE HIP-JOINT: ZONA ORBICULARIS (see p. 223), AND ITS RELATIONS TO THE ILIOFEMORAL, PUBOFEMORAL, AND ISCHIOCAPSULAR LIGAMENTS; THE THIN PORTIONS OF THE CAPSULE, AND THE COMMUNICATION BETWEEN THE SYNOVIAL CAVITY AND THE BURSA BENEATH THE TENDON OF THE ILIOPSOAS MUSCLE; THE ACETABULUM, WITH THE TRANSVERSE LIGAMENT OF THE ACETABULUM, AND THE INTER-ARTICULAR OR ROUND LIGAMENT.

After the capsule of the right hip-joint had been prepared from without, the joint was fully flexed; the capsule was then divided by a section in the direction of a line passing from the middle of the upper border of the great trochanter to the inner border of the iliopectineal eminence; the ilium was cut away except for that portion of the bone which contributes to the formation of the acetabulum, and the neck of the femur was sawn across just internal to the distal attachment of the capsule; the interarticular ligament was divided close to the head of the femur, and this latter, together with the intracapsular portion of the neck, was removed; the acetabulum and the remaining proximal portion of the femur were divided in two by a continuation of the section already made through the upper wall of the capsule; the two halves of the acetabulum and the head and neck of the femur were then opened out till the cut surfaces met at a very obtuse angle; so that the capsule and the cotyloid ligament were fully exposed from within. The synovial membrane was dissected off, and the inner surface of the capsule cleaned from fat and cellular tissue.



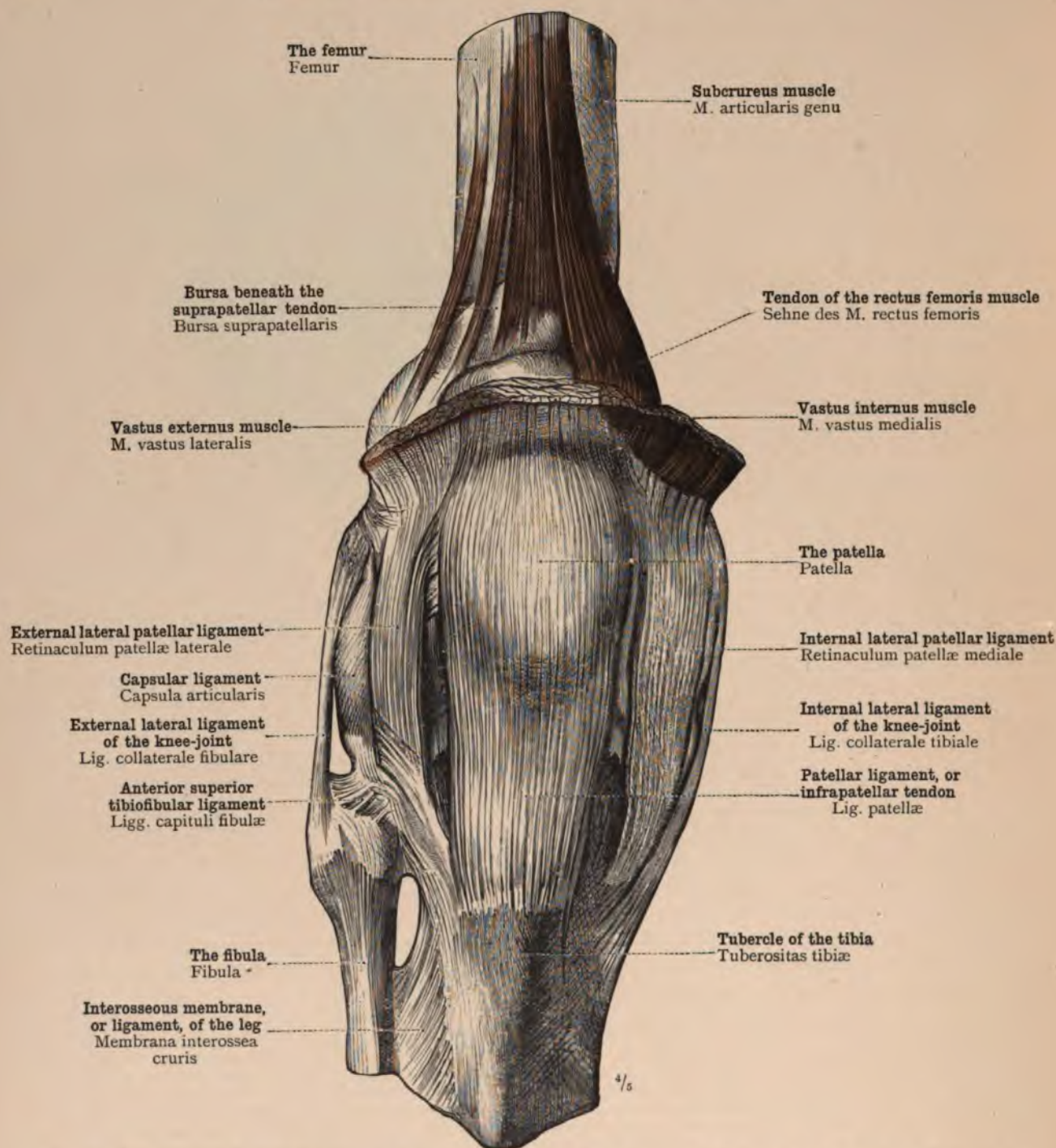


FIG. 466.—ARTICULATIO GENU, THE KNEE-JOINT: LIGAMENTUM PATELLÆ, PATELLAR LIGAMENT, OR INFRAPATELLAR TENDON; RETINACULA PATELLÆ, LATERAL PATELLAR LIGAMENTS; LIGAMENTA COLLATERALIA, LATERAL LIGAMENTS OF THE KNEE-JOINT. BURSA SUPRAPATELLARIS, THE BURSA BENEATH THE SUPRAPATELLAR TENDON; THE RELATION OF THE UNUSUALLY LARGE SUBCRUREUS MUSCLE TO THE CAPSULE OF THE KNEE-JOINT. ARTICULATIO TIBIOFIBULARIS, SUPERIOR TIBIOFIBULAR ARTICULATION: LIGAMENTA CAPITULI FIBULÆ, ANTERIOR SUPERIOR TIBIOFIBULAR LIGAMENT. (THE RIGHT KNEE-JOINT FROM BEFORE.)

The synovial cavity has been injected with tallow.

Articulatio genu—The knee-joint.



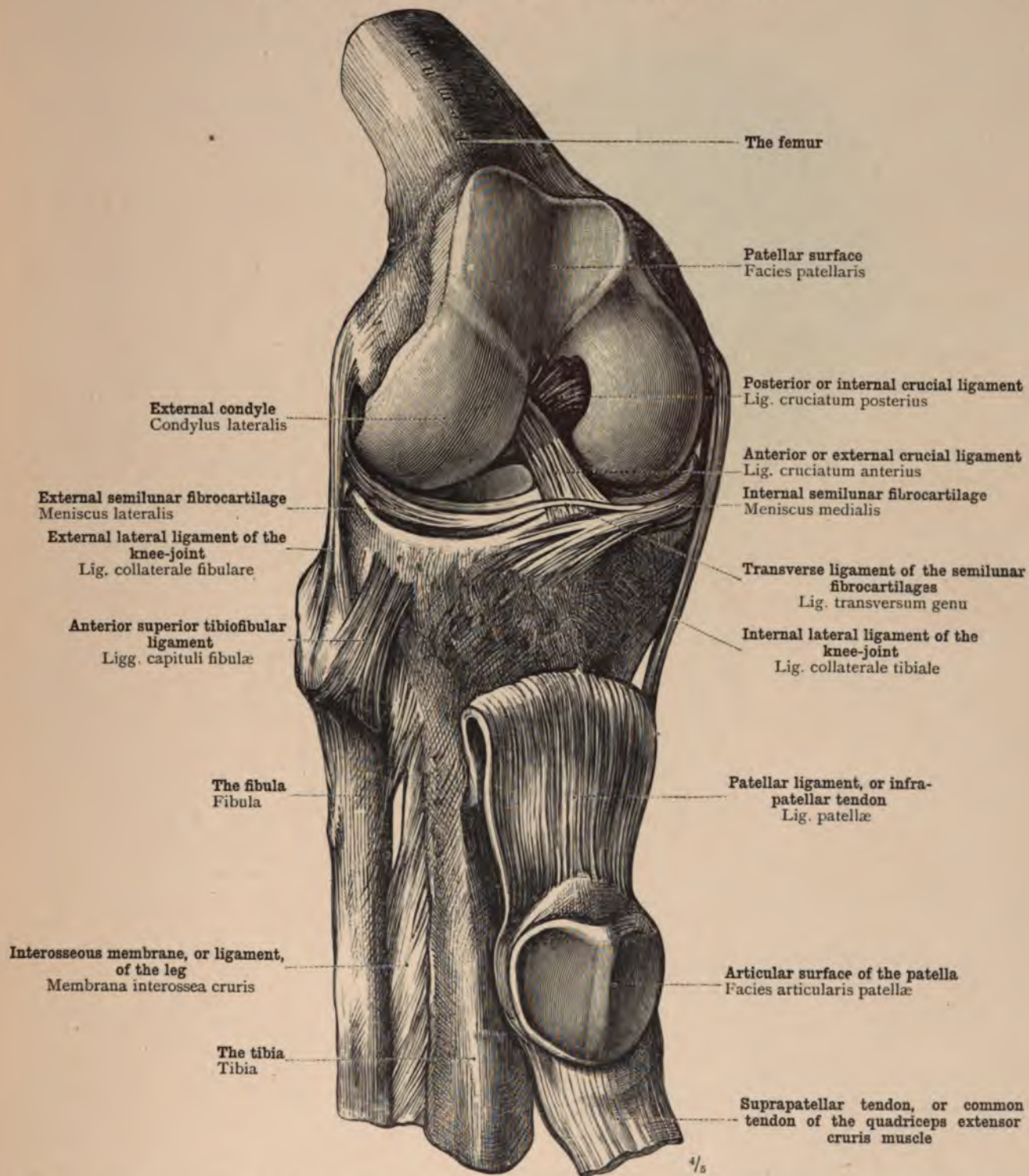


FIG. 467.—ARTICULATIO GENU, THE KNEE-JOINT: LIGAMENTA COLLATERALIA, LATERAL LIGAMENTS OF THE KNEE-JOINT; LIGAMENTA CRUCIATA, CRUCIAL LIGAMENTS; LIGAMENTUM PATELLÆ, PATELLAR LIGAMENT, OR INFRAPATELLAR TENDON. ARTICULATIO TIBIOFIBULARIS, SUPERIOR TIBIOFIBULAR ARTICULATION: LIGAMENTA CAPITULI FIBULÆ, ANTERIOR SUPERIOR TIBIOFIBULAR LIGAMENT. (THE RIGHT KNEE-JOINT SEEN FROM BEFORE AND WITHOUT.)

The capsular ligament has been removed from the front of the joint between the two lateral ligaments, and the patellar ligament has been turned downwards.

Articulatio genu—The knee-joint.



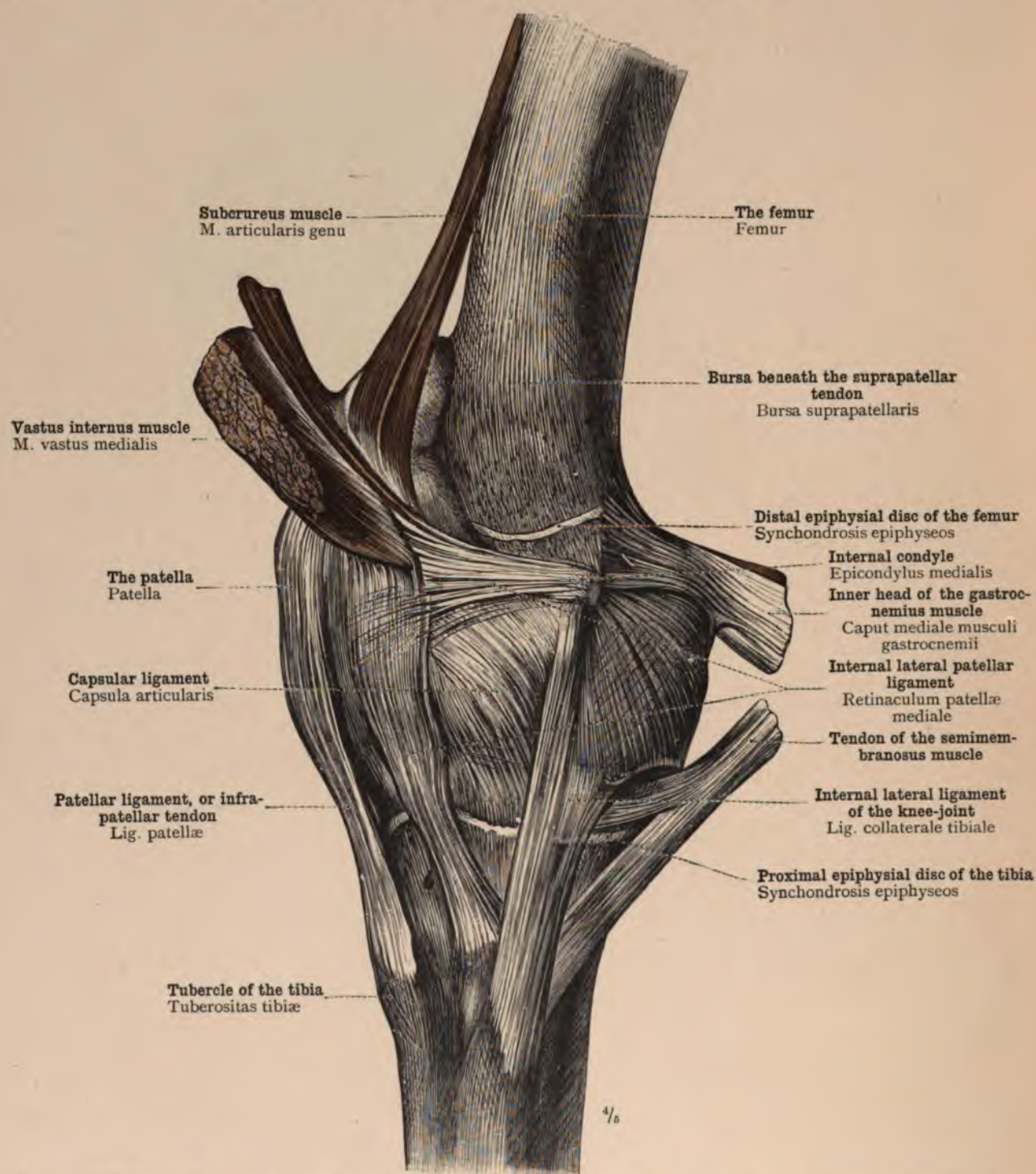


FIG. 468.—ARTICULATIO GENU, THE KNEE-JOINT: CAPSULA ARTICULARIS, CAPSULAR LIGAMENT, AND THE RELATIONS OF THE SUBCRUREUS MUSCLE TO THIS LIGAMENT; BURSA SUPRAPATELLARIS, THE BURSA BENEATH THE SUPRAPATELLAR TENDON. LIGAMENTUM COLLATERALE TIBIÆ, INTERNAL LATERAL LIGAMENT OF THE KNEE-JOINT; LIGAMENTUM PATELLÆ ET RETINACULUM PATELLÆ MEDIALE, PATELLAR LIGAMENT, OR INFRAPATELLAR TENDON, AND INTERNAL LATERAL PATELLAR LIGAMENT. RELATIONS OF THE EPIPHYSIAL DISCS TO THE ARTICULATION.

The same preparation as that of Fig. 466, seen from within.

Articulatio genu—The knee-joint.



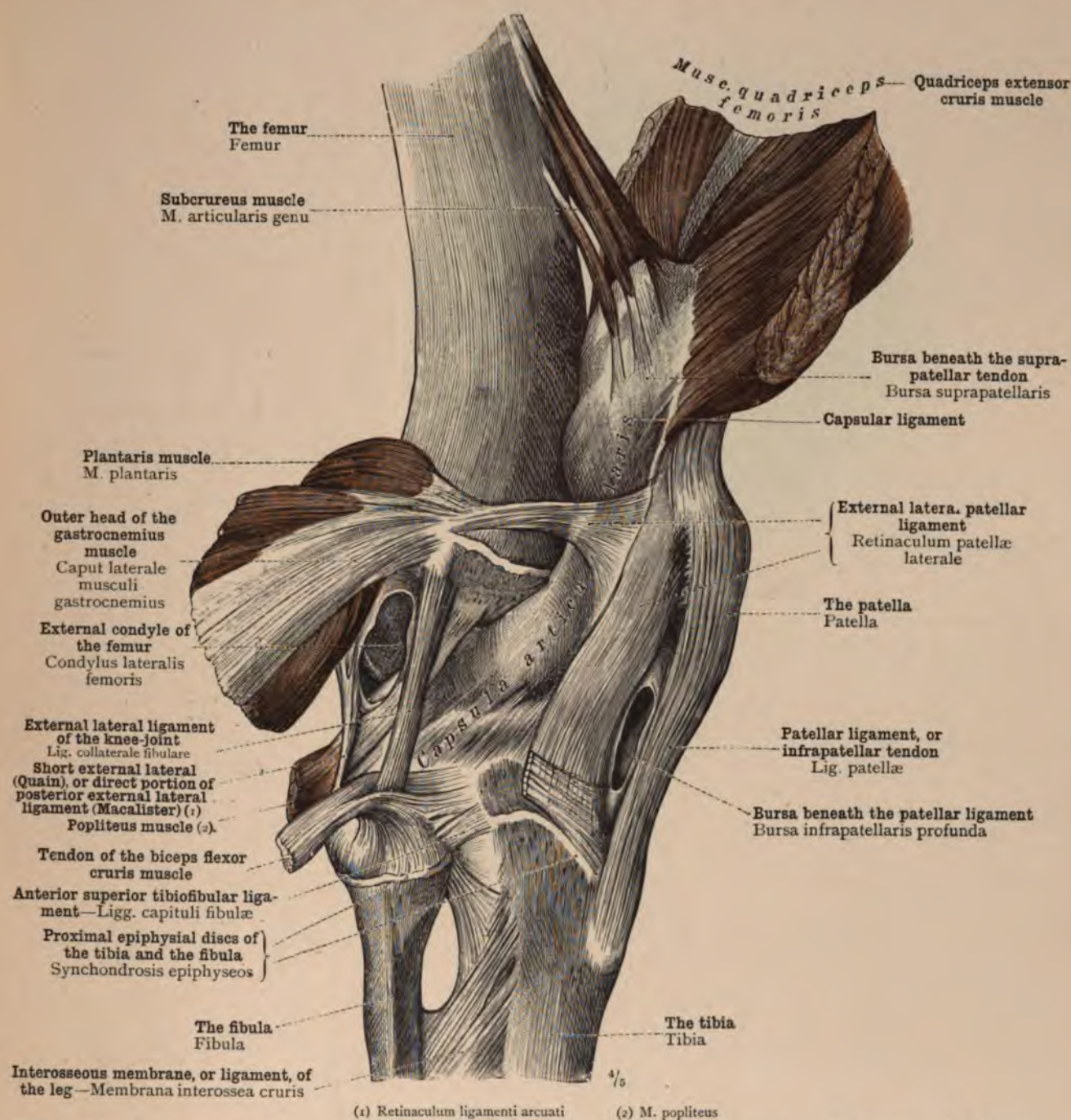


FIG. 469.—ARTICULATIO GENU, THE KNEE-JOINT: CAPSULA ARTICULARIS, CAPSULAR LIGAMENT; BURSA SUPRAPATELLARIS, AND THE RELATIONS OF THE QUADRICEPS EXTENSOR CRURIS MUSCLE TO THE SAME. LIGAMENTUM COLLATERALE FIBULARE, EXTERNAL LATERAL LIGAMENT OF THE KNEE-JOINT. LIGAMENTUM PATELLÆ ET RETINACULUM PATELLÆ LATERALE, PATELLAR LIGAMENT, OR INFRAPATELLAR TENDON, AND EXTERNAL LATERAL PATELLAR LIGAMENT; THE RELATIONS OF THE LATTER TO THE PLANTARIS MUSCLE AND TO THE OUTER HEAD OF THE GASTROCNEMIUS MUSCLE. BURSA INFRAPATELLARIS PROFUNDA, BURSA BENEATH THE PATELLAR LIGAMENT. ARTICULATIO TIBIOFIBULARIS, SUPERIOR TIBIOFIBULAR ARTICULATION. LIGAMENTA CAPITULI FIBULÆ, ANTERIOR SUPERIOR TIBIOFIBULAR LIGAMENT. RELATIONS OF THE EPIPHYSIAL DISCS TO BOTH THE JOINTS.

The same preparation as that of Figs. 466 and 468, seen from the outer side. The synovial cavity of the knee-joint has been opened behind the external lateral ligament of the knee-joint, and the bursa beneath the patellar ligament has also been opened.

Articulatio genu—The knee-joint.



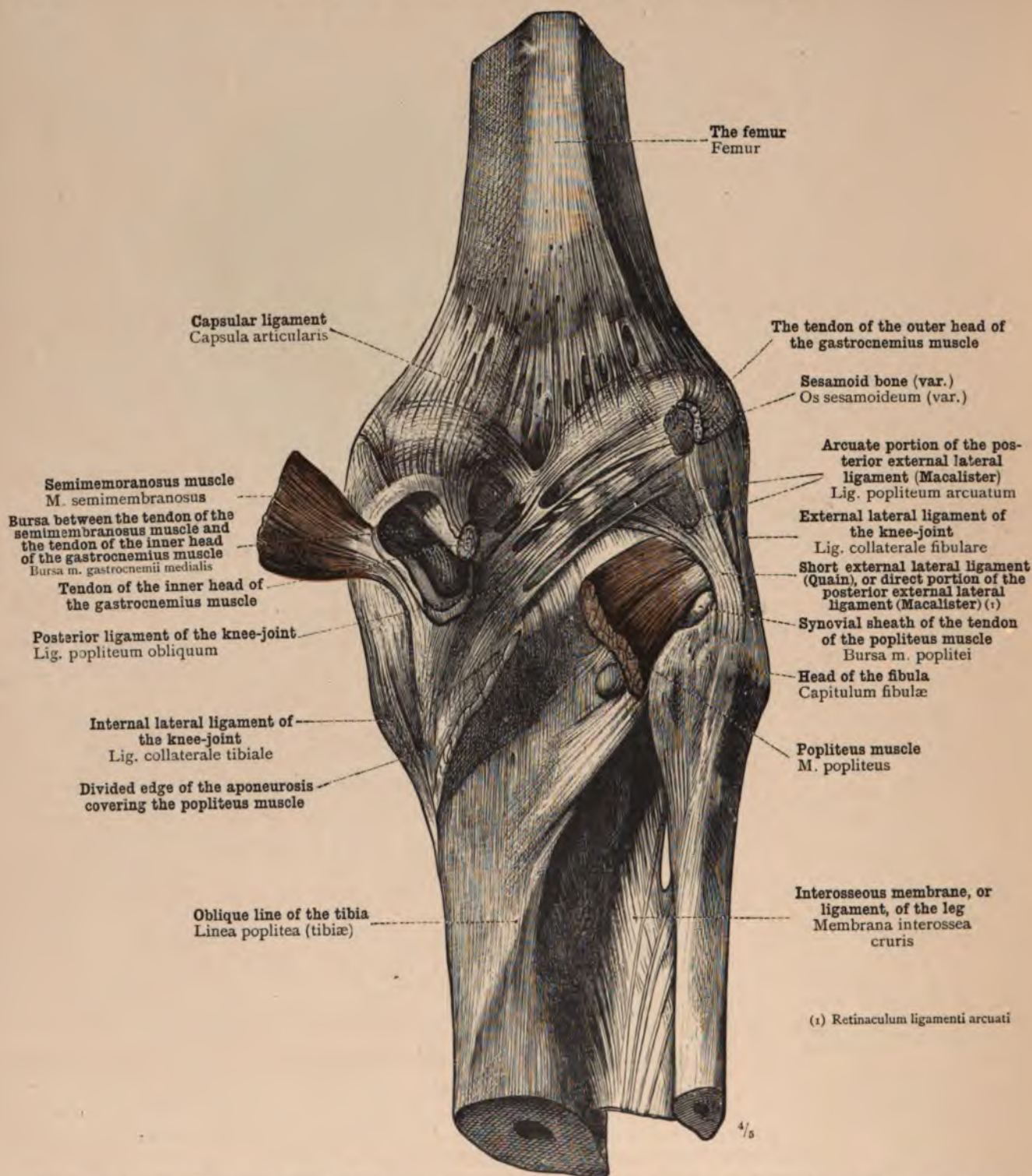


FIG. 470.—ARTICULATIO GENU, THE KNEE-JOINT: CAPSULA ARTICULARIS, CAPSULAR LIGAMENT; LIGAMENTUM POPLITEUM OBLIQUUM, POSTERIOR LIGAMENT OF THE KNEE-JOINT; RELATIONS OF THIS LIGAMENT TO THE TENDON OF THE SEMIMEMBRANOSUS MUSCLE AND TO THE OUTER HEAD OF THE GASTROCNEMIUS MUSCLE; LIGAMENTUM POPLITEUM ARCUATUM ET RETINACULUM LIGAMENTI ARCUATI, ARCULATE PORTION OF THE POSTERIOR EXTERNAL LATERAL LIGAMENT (MACALISTER), AND SHORT EXTERNAL LATERAL LIGAMENT (QUAIN), OR DIRECT PORTION OF THE POSTERIOR EXTERNAL LATERAL LIGAMENT (MACALISTER). BURSA MUSCULI GASTROCNEMII MEDIALIS, BURSA BETWEEN THE TENDON OF THE SEMIMEMBRANOSUS MUSCLE AND THE TENDON OF THE INNER HEAD OF THE GASTROCNEMIUS MUSCLE, COMMUNICATING WITH THE KNEE-JOINT AND HAVING A COMMON CAVITY WITH THE BURSA BETWEEN THE TENDON OF THE SEMIMEMBRANOSUS MUSCLE AND THE KNEE-JOINT. BURSA MUSCULI POPLITEI, SYNOVIAL SHEATH OF THE TENDON OF THE POPLITEUS MUSCLE. (THE RIGHT KNEE-JOINT, SEEN FROM BEHIND.)

Articulatio genu—The knee-joint.



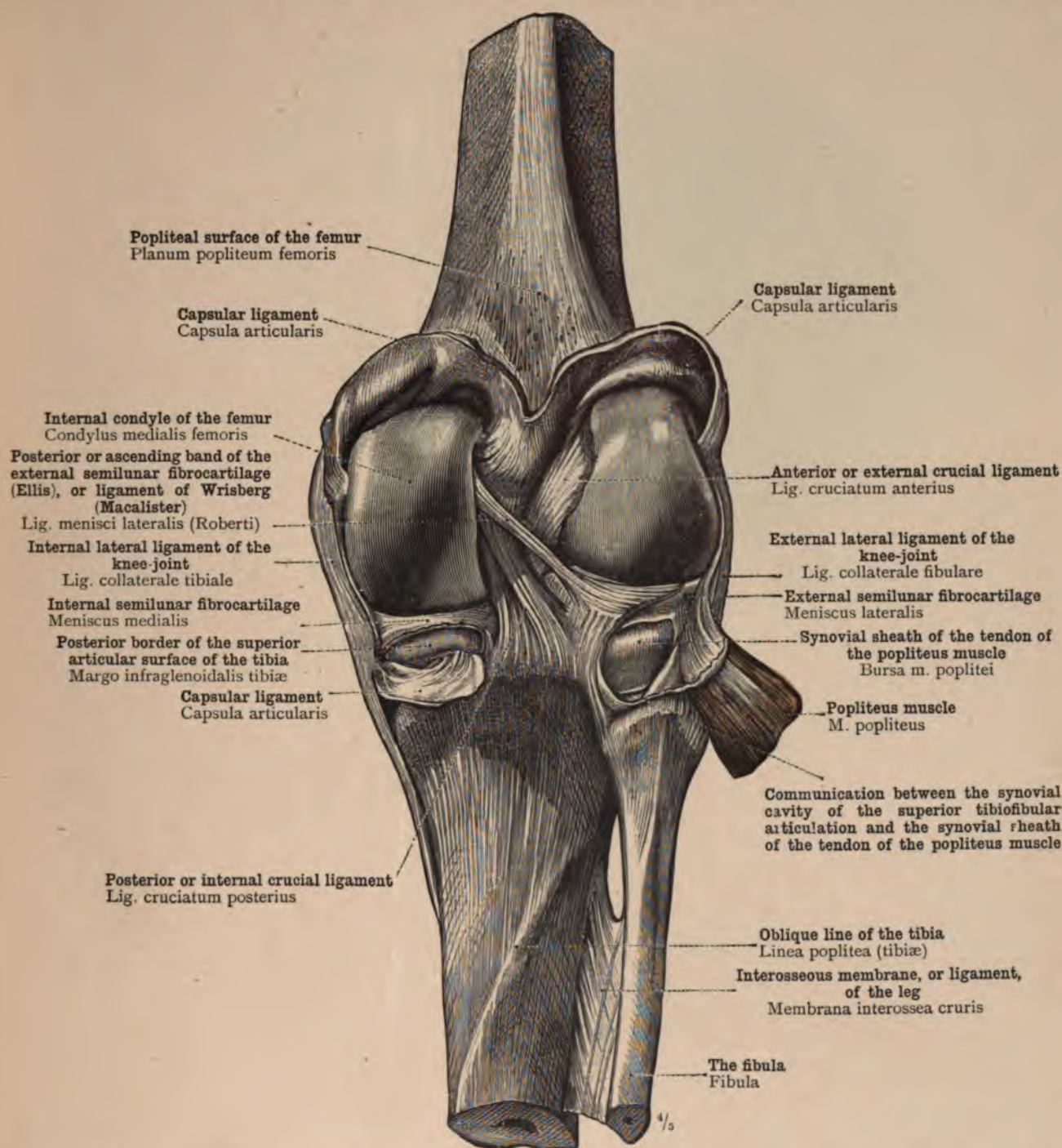


FIG. 471.—ARTICULATIO GENU, THE KNEE-JOINT: LIGAMENTA CRUCIATA, CRUCIAL LIGAMENTS, AND LIGAMENTUM MENISCI LATERALIS, POSTERIOR OR ASCENDING BAND OF THE EXTERNAL SEMILUNAR FIBROCARILAGE (ELLIS) OR LIGAMENT OF WRISBERG (MACALISTER), (VARIETY<sup>1</sup>). COMMUNICATION OF THE SYNOVIAL SHEATH OF THE TENDON OF THE POPLITEUS MUSCLE WITH THE SYNOVIAL CAVITIES OF THE KNEE-JOINT AND OF THE SUPERIOR TIBIOFIBULAR ARTICULATION. (THE RIGHT KNEE-JOINT, SEEN FROM BEHIND.)

The posterior portion of the capsular ligament, between the external and internal lateral ligaments, has been removed, except for a strip left above close to the femoral attachment, which has been turned upwards; the synovial sheath of the tendon of the popliteus muscle has been opened at its inner side, and its posterior wall has been turned outwards with the tendon and the proximal portion of the popliteus muscle.

<sup>1</sup> Though this band is called a variety by Toldt, it is, in fact, usually present, but its situation varies; inasmuch as it passes, sometimes behind (as here), and sometimes before, and sometimes as a double band behind and before, the posterior or internal crucial ligament. Its strength and thickness varies much, but it is seldom entirely wanting.—T.



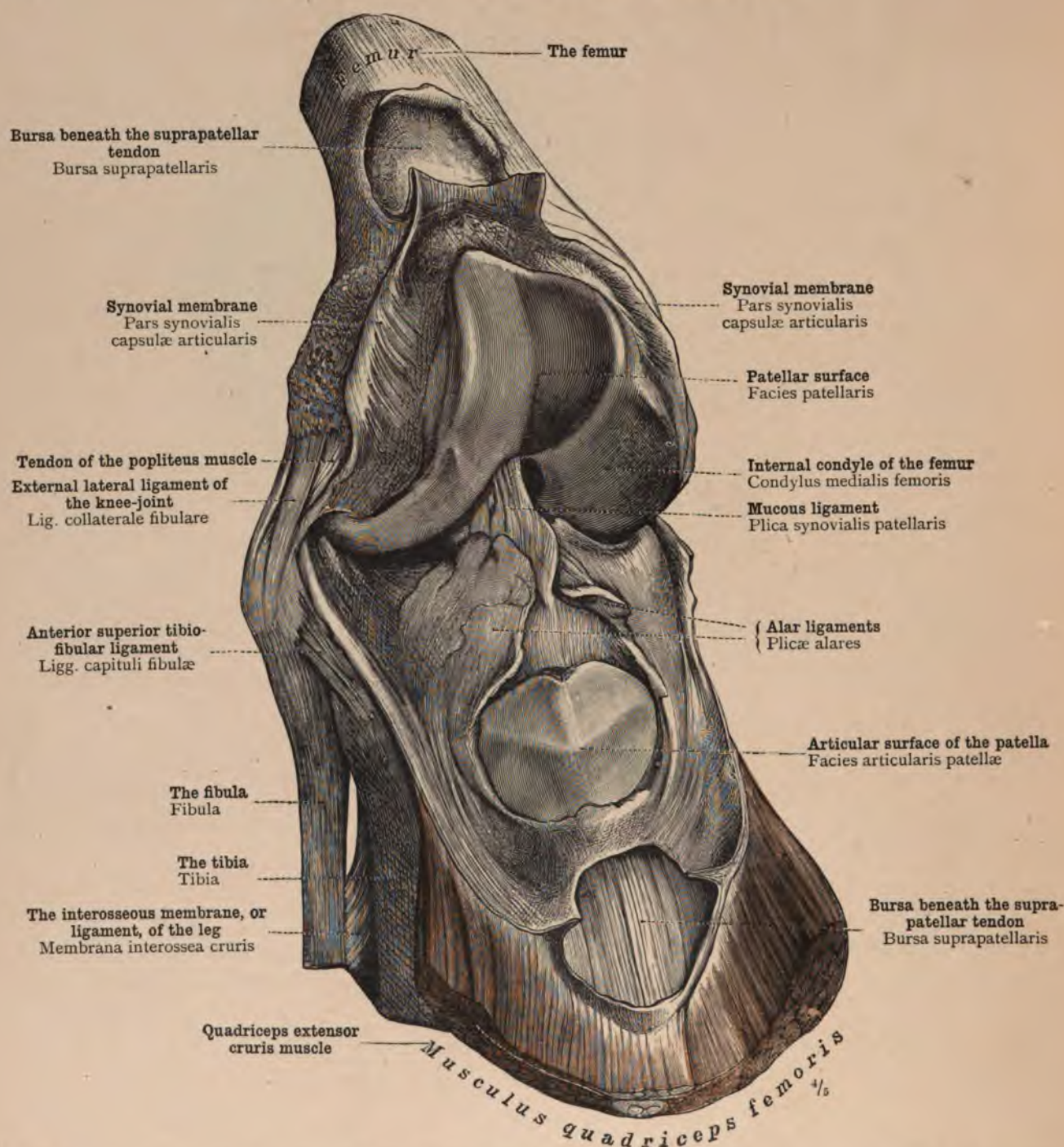


FIG. 472.—ARTICULATIO GENU, THE KNEE-JOINT: PARS SYNOVIALIS CAPSULÆ ARTICULARIS, SYNOVIAL MEMBRANE OF THE KNEE-JOINT; PLICA SYNOVIALIS PATELLARIS, MUCOUS LIGAMENT; PLICÆ ALARES, ALAR LIGAMENTS; BURSA SUPRAPATELLARIS, BURSA BENEATH THE SUPRAPATELLAR TENDON. (THE RIGHT KNEE-JOINT, SEEN FROM BEFORE AND WITHOUT.)

The joint was first injected, and the injected material allowed to solidify; the capsule of the joint was then prepared from without, the quadriceps extensor cruris muscle being left intact; subsequently the joint was opened by a section passing through the quadriceps muscle and the upper part of the front of the capsule from one lateral ligament to the other close to the attachment of the capsule to the femur, and the anterior wall of the joint together with the distal portion of the quadriceps extensor muscle was turned down. The quadriceps was divided at a somewhat higher level than the capsule, and the bursa beneath the suprapatellar tendon divided in the frontal plane, to show the communication of this bursa with the joint.

Articulatio genu—The knee-joint.



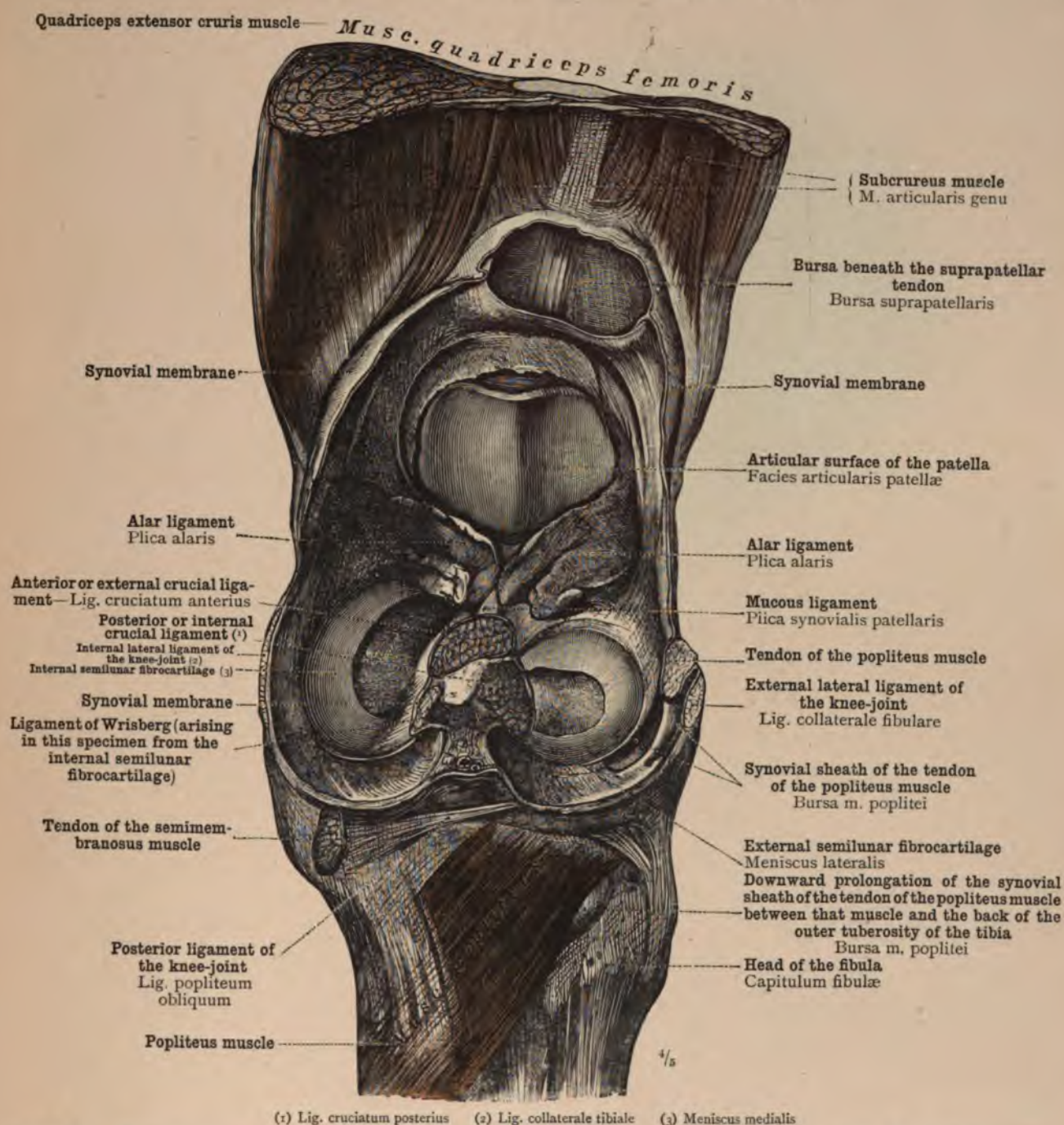


FIG. 473.—ARTICULATIO GENU, THE KNEE-JOINT: THE SEMILUNAR FIBROCARILAGES, THE ALAR LIGAMENTS, AND THE MUCOUS LIGAMENT; THE INSERTION INTO THE SYNOVIAL MEMBRANE OF THE SUBCRUREUS MUSCLE; THE EXTENSION OF THE SYNOVIAL MEMBRANE OF THE KNEE-JOINT TO FORM THE SYNOVIAL SHEATH OF THE TENDON OF THE POPLITEUS MUSCLE AND THE BURSA BETWEEN THAT MUSCLE AND THE POSTERIOR SURFACE OF THE OUTER TUBEROSITY OF THE TIBIA, AND THE RELATION OF THE SYNOVIAL SHEATH OF THE TENDON TO THE EXTERNAL LATERAL LIGAMENT OF THE KNEE-JOINT. (THE PROXIMAL EXTREMITIES OF THE BONES OF THE LEG WITH THE ANTERIOR WALL OF THE CAPSULE OF THE KNEE-JOINT SEEN FROM BEHIND.)

After the joint had been injected, and the injected material allowed to solidify, the capsule of the joint was prepared from without, the quadriceps extensor cruris muscle being left intact; the lateral ligaments and the tendon of the popliteus muscle were then divided, and the capsule was opened behind and on either side at a higher level than the semilunar cartilages, and was divided in front along the line of its reflection on to the anterior surface of the femur; after division of the crucial ligaments, the femur was removed.

Articulatio genu—The knee-joint.



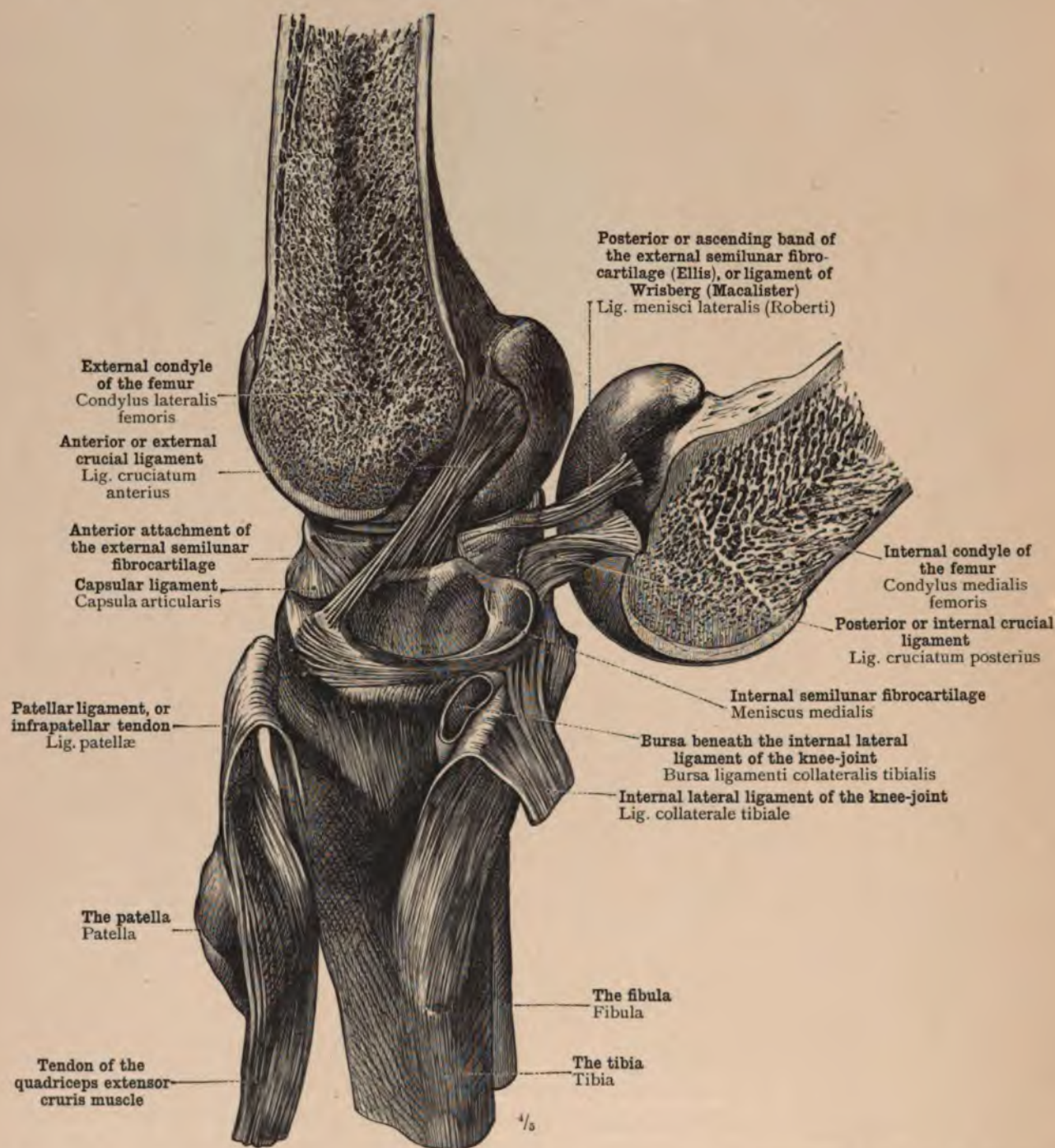


FIG. 474.—ARTICULATIO GENU, THE KNEE-JOINT: CRUCIAL LIGAMENTS AND LIGAMENT OF WRISBERG; BURSA BENEATH THE INTERNAL LATERAL LIGAMENT OF THE KNEE-JOINT. (THE RIGHT KNEE-JOINT SEEN FROM THE INNER SIDE.)

The capsule was removed, the patellar ligament and the internal lateral ligament were turned downwards; the femur was divided sagittally through the middle of the intercondylar fossa, and the external condyle placed in the position it occupies during extension of the knee-joint, while the internal condyle was turned backwards and rotated on its median axis to the extent of  $180^{\circ}$ .

Articulatio genu—The knee-joint.



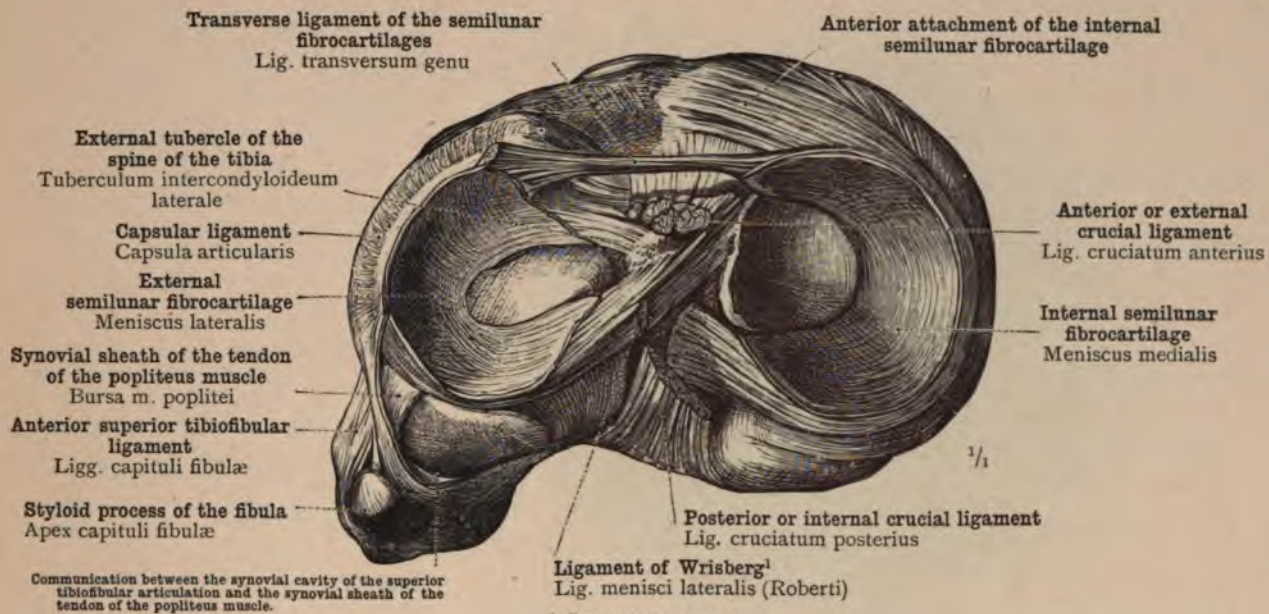


FIG. 475.—THE DISTAL ARTICULAR SURFACES OF THE KNEE-JOINT: THE INTERARTICULAR SEMILUNAR FIBROCARILAGES, AND THE EXTENSION OF THE ANTERIOR EXTREMITIES OF THESE IN THE TRANSVERSE LIGAMENT OF THE SEMILUNAR FIBROCARILAGES. THE COMMUNICATION BETWEEN THE SUPERIOR TIBIOFIBULAR ARTICULATION AND THE SYNOVIAL SHEATH OF THE TENDON OF THE POPLITEUS MUSCLE. (THE PROXIMAL EXTREMITY OF THE LEFT TIBIA WITH THE SEMILUNAR FIBROCARILAGES AND THE HEAD OF THE FIBULA, SEEN FROM ABOVE.)

The capsule was divided above (proximal to) the semilunar fibrocartilages, the crucial ligaments were cut across, and the femur was removed.

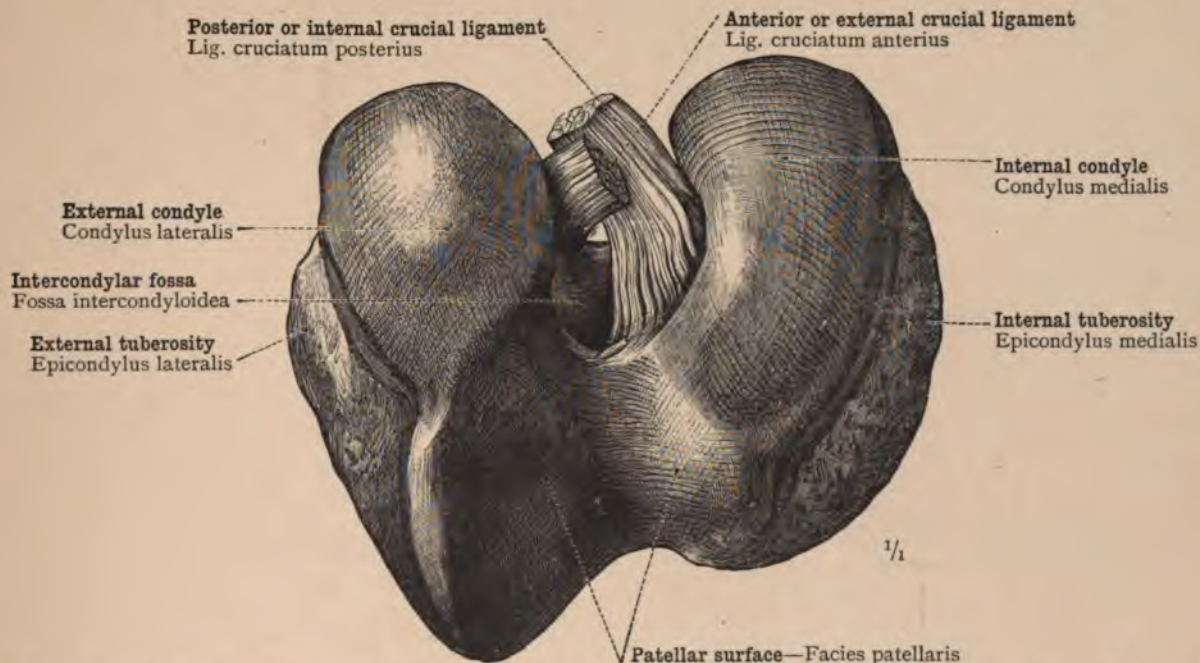


FIG. 476.—THE PROXIMAL ARTICULAR SURFACES OF THE KNEE-JOINT, AND THE FEMORAL ATTACHMENTS OF THE CRUCIAL LIGAMENTS.

The distal extremity of the femur removed from the preparation shown in Fig. 475, seen from below.

Articulatio genu—The knee-joint.



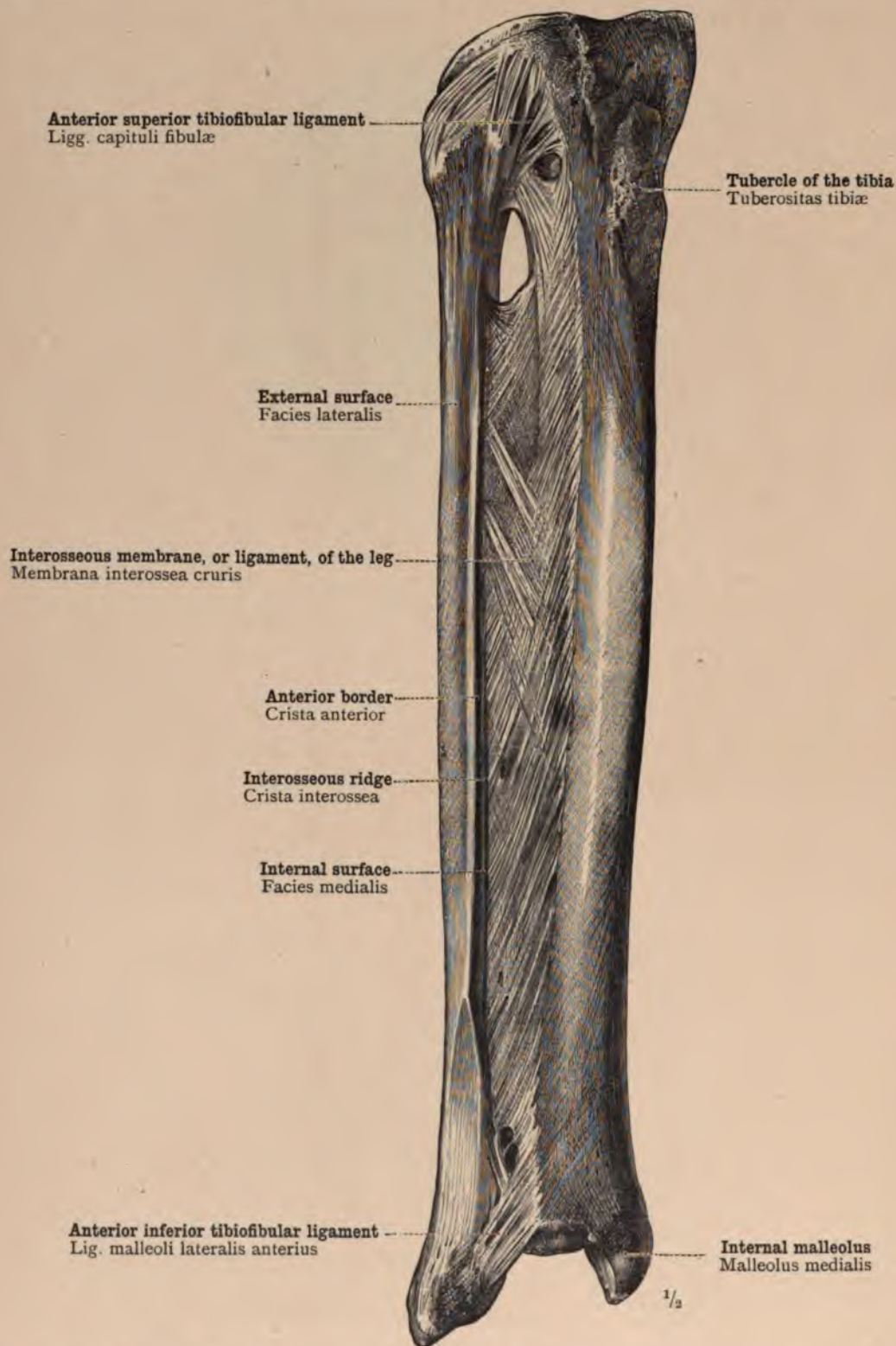


FIG. 477.—ARTICULATIO TIBIOFIBULARIS ET SYNDESMOSIS TIBIOFIBULARIS, THE TIBIOFIBULAR ARTICULATIONS. THE INTEROSSEOUS MEMBRANE, OR LIGAMENT, OF THE RIGHT LEG; THE ANTERIOR SUPERIOR AND ANTERIOR INFERIOR TIBIOFIBULAR LIGAMENTS. (SEEN FROM BEFORE.)

The Tibiofibular Articulations.



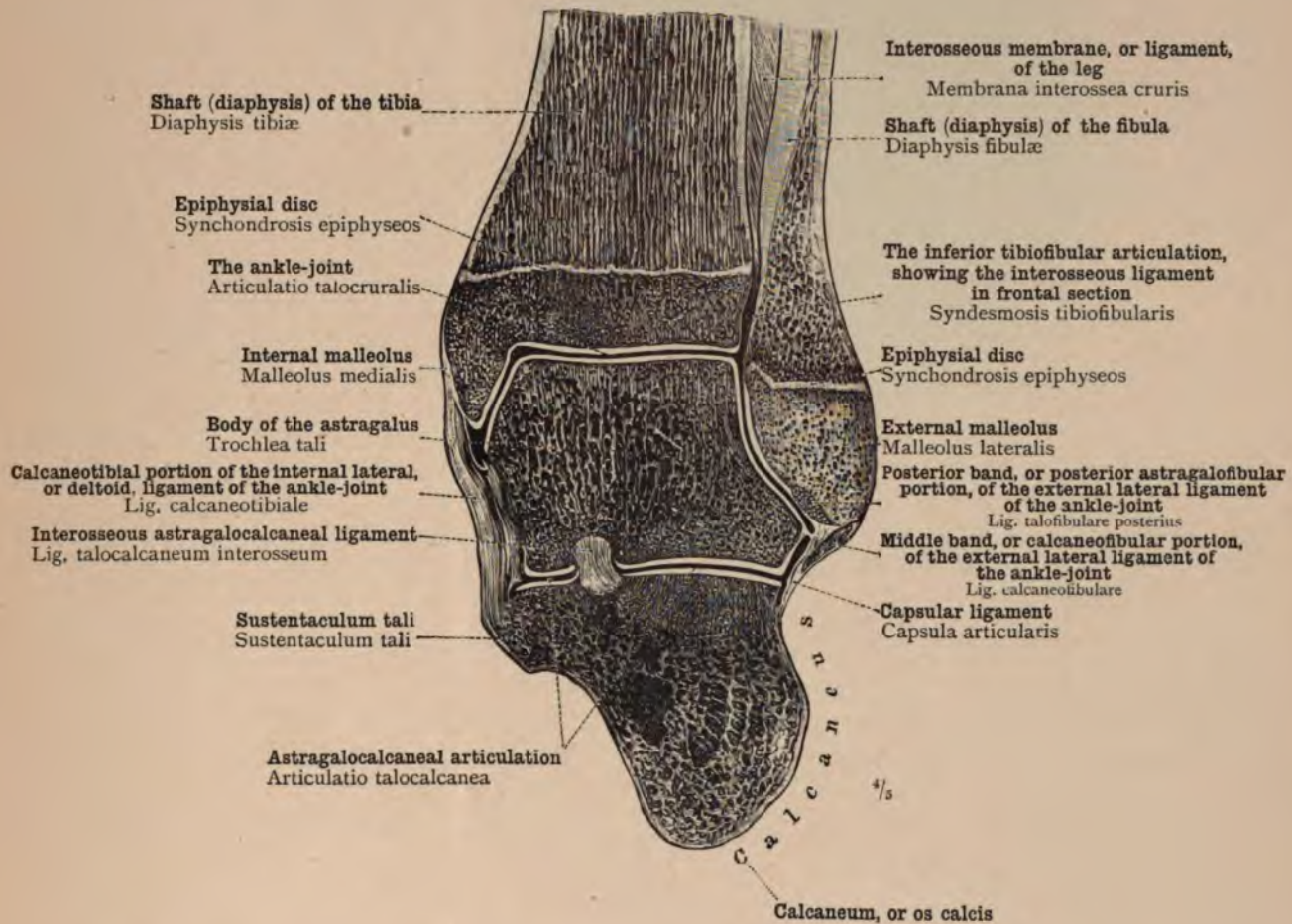


FIG. 478.—ARTICULATIONES TALOCRURALIS ET TALOCALCANEAE, THE ANKLE-JOINT AND THE ASTRAGALOCALCANEAL ARTICULATION; SYNDESMOSIS TIBIOFIBULARIS, INFERIOR TIBIOFIBULAR ARTICULATION, SHOWING THE INTEROSSEOUS LIGAMENT. THE RELATIONS OF THE DISTAL EPIPHYSIAL DISCS OF THE TIBIA AND THE FIBULA TO THE ANKLE-JOINT. (THE ANKLE-JOINT AND THE ASTRAGALOCALCANEAL ARTICULATION OF THE RIGHT LEG, DIVIDED IN A VERTICAL PLANE CLOSELY APPROXIMATING THE FRONTAL PLANE; POSTERIOR SURFACE OF THE ANTERIOR SEGMENT.)

The plane of section passes through the lowermost parts of the lateral portions of the superior articular surface of the astragalus.





FIG. 479.—THE CAPSULAR LIGAMENTS AND THE SUPERFICIAL POSTERIOR LIGAMENTS OF THE ANKLE-JOINT AND OF THE ASTRAGALOCALCANEAL ARTICULATION. THE RELATIONS OF THE DISTAL EPIPHYSIAL DISCS OF THE TIBIA AND FIBULA TO THE ANKLE-JOINT. THE POSTERIOR PORTIONS OF THE LATERAL LIGAMENTS OF THE ANKLE-JOINT: LIGAMENTUM TALOTIBIALE POSTERIUS, THE POSTERIOR ASTRAGALOTIBIAL PORTION OF THE INTERNAL LATERAL, OR DELTOID, LIGAMENT OF THE ANKLE-JOINT; LIGAMENTUM CALCANEOTIBIALE, THE CALCANEOTIBIAL PORTION OF THE INTERNAL LATERAL, OR DELTOID, LIGAMENT OF THE ANKLE-JOINT; LIGAMENTUM CALCANEOFIBULARE, THE MIDDLE BAND, OR CALCANEOFIBULAR PORTION, OF THE EXTERNAL LATERAL LIGAMENT OF THE ANKLE-JOINT. LIGAMENTUM TALOCALCANEUM POSTERIUS, THE POSTERIOR ASTRAGALOCALCANEAL LIGAMENT.—SYNDESMOSIS TIBIOFIBULARIS: LIGAMENTUM MALLEOLI LATERALIS POSTERIUS, THE POSTERIOR INFERIOR TIBIOFIBULAR LIGAMENT. (THE ANKLE-JOINT AND THE ASTRAGALOCALCANEAL ARTICULATION OF THE RIGHT LEG, SEEN FROM BEHIND.)



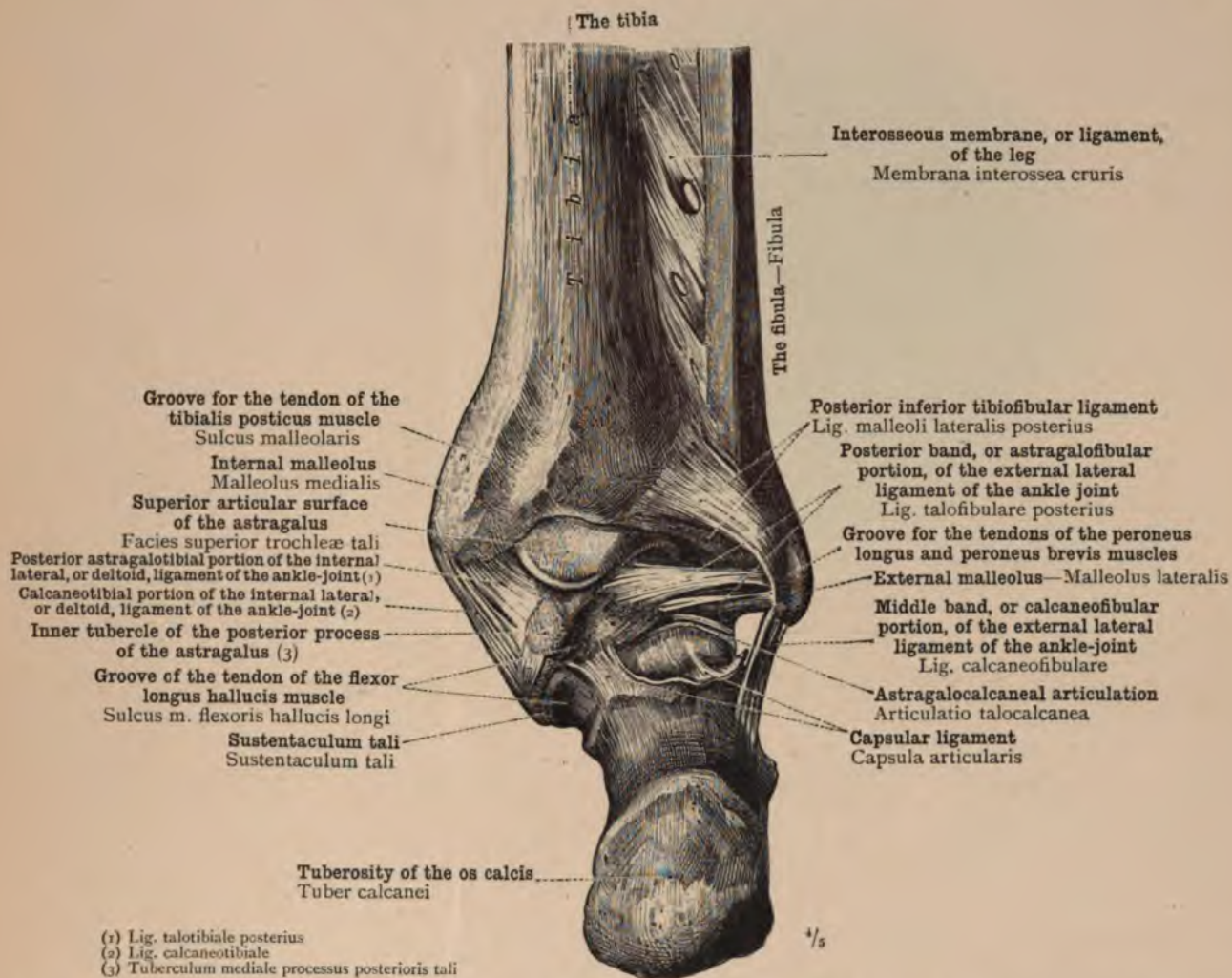


FIG. 480.—ARTICULATIONES TALOCRURALIS ET TALOCALCANEÆ, THE ANKLE-JOINT AND THE ASTRAGALOCALCANEAL ARTICULATION; SYNDESMOSIS TIBIOFIBULARIS, THE INFERIOR TIBIOFIBULAR ARTICULATION: LIGAMENTUM MALLEOLI LATERALIS POSTERIUS, THE POSTERIOR INFERIOR TIBIOFIBULAR LIGAMENT. THE POSTERIOR PORTIONS OF THE LATERAL LIGAMENTS: LIGAMENTUM TALOTIBIALE POSTERIUS, THE POSTERIOR ASTRAGALOTIBIAL PORTION OF THE INTERNAL LATERAL, OR DELTOID, LIGAMENT OF THE ANKLE-JOINT; LIGAMENTUM CALCANEOTIBIALE, THE CALCANEOTIBIAL PORTION OF THE INTERNAL LATERAL, OR DELTOID, LIGAMENT OF THE ANKLE-JOINT; LIGAMENTUM TALOFIBULARE POSTERIUS, THE POSTERIOR BAND, OR ASTRAGALOFIBULAR PORTION, OF THE EXTERNAL LATERAL LIGAMENT OF THE ANKLE-JOINT; LIGAMENTUM CALCANEOFIBULARE, THE MIDDLE BAND, OR CALCANEOFIBULAR PORTION, OF THE EXTERNAL LATERAL LIGAMENT OF THE ANKLE-JOINT. (THE ANKLE-JOINT AND THE ASTRAGALOCALCANEAL ARTICULATION OF THE RIGHT LEG, SEEN FROM BEHIND.)

The thin posterior portion of the capsule of the ankle-joint has been removed. The posterior portion of the capsule of the astragalocalcaneal articulation has been separated from its attachment to the astragalus external to its attachment to the posterior process of that bone, and turned backwards on to the os calcis.



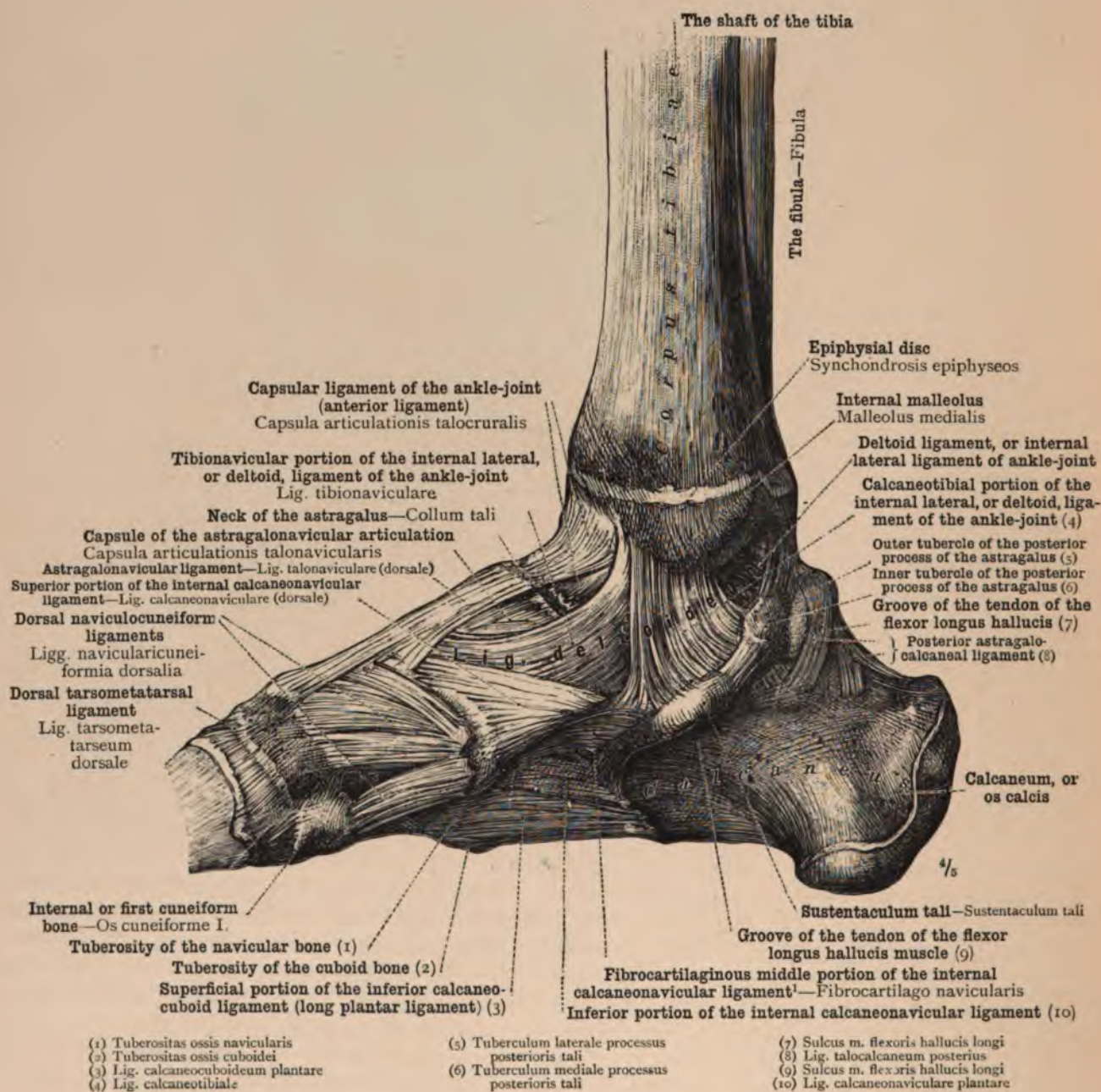
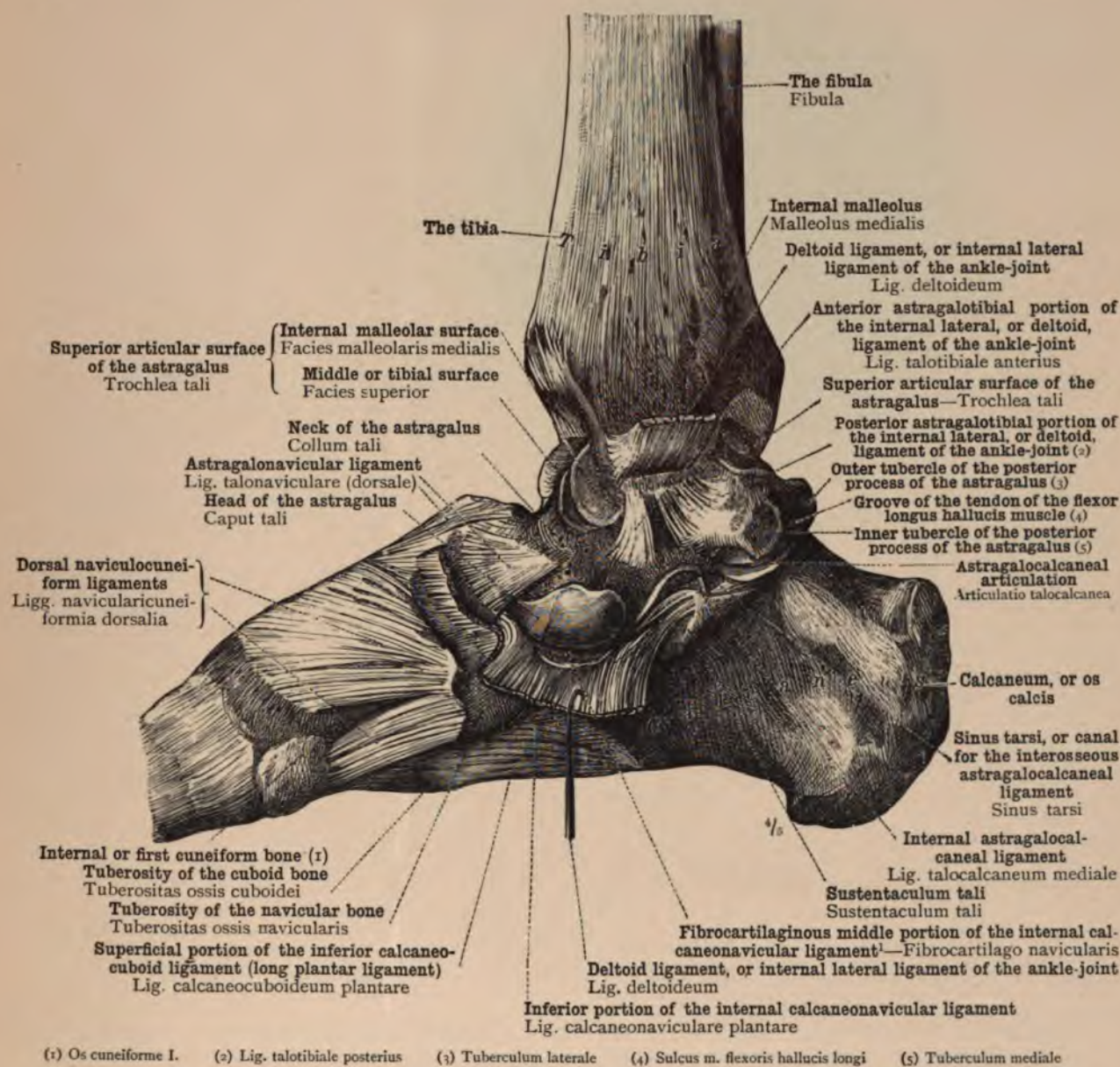


FIG. 481.—THE SUPERFICIAL INTERNAL LIGAMENTS OF THE ANKLE-JOINT AND OF THE ASTRAGALOCALCANEAL ARTICULATION, AND THE RELATION OF THE DISTAL EPIPHYSIAL DISC OF THE TIBIA TO THE ANKLE-JOINT. (THE RIGHT TARSUS, WITH THE ADJOINING PORTIONS OF THE TIBIA AND FIBULA AND OF THE FIRST METATARSAL BONE; SEEN FROM THE INNER SIDE.)





<sup>1</sup> See note <sup>1</sup> to p. 248.

FIG. 482.—THE DEEP INTERNAL LIGAMENTS OF THE ANKLE-JOINT AND OF THE ASTRAGALOCALCANEAL ARTICULATION. (THE RIGHT TARSUS, WITH THE ADJOINING PORTIONS OF THE TIBIA AND FIBULA AND OF THE FIRST METATARSAL BONE; SEEN FROM THE INNER SIDE.)

The deltoid ligament (internal lateral ligament of the ankle-joint) has been cut across the middle, and the divided ends have been turned up and down. The capsular ligaments of the ankle-joint and of the astragalocalcaneal articulation have been removed, except for the deeper special bands.



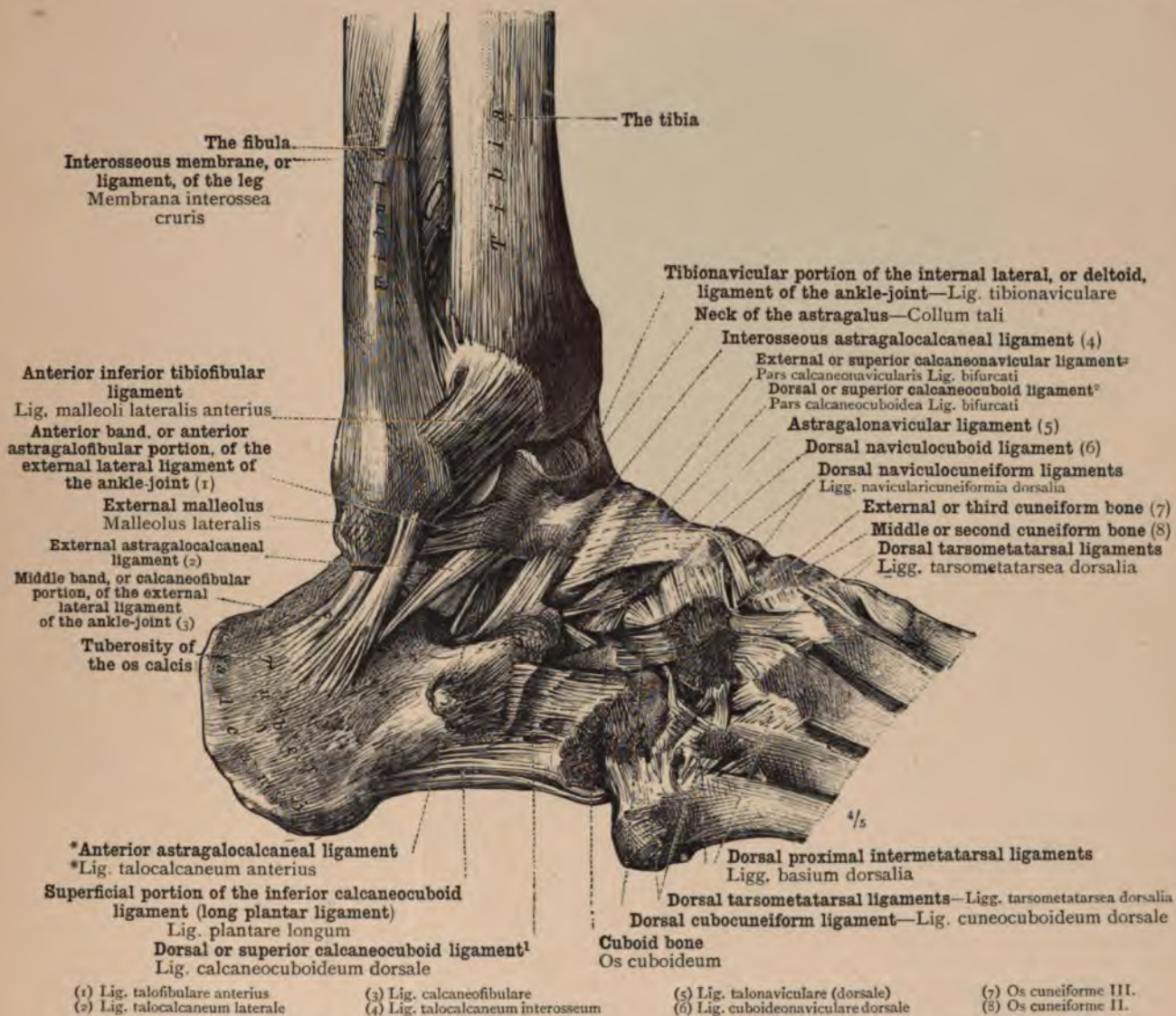


FIG. 483.—ARTICULATIO TALOCRURALIS, THE ANKLE-JOINT; SYNDESOSIS TIBIOFIBULARIS, THE INFERIOR TIBIOFIBULAR ARTICULATION. THE RELATIONS OF THE DISTAL EPIPHYSIAL DISCS OF THE TIBIA AND FIBULA TO THE ANKLE-JOINT. ARTICULATIONES INTERTARSEÆ ET TARSO-METATARSEÆ, THE INTERTARSAL AND TARSO-METATARSAL ARTICULATIONS; ARTICULATIONES INTERMETATARSEÆ, THE INTERMETATARSAL ARTICULATIONS. LIGAMENTA TARSII DORSALIA ET TARSO-METATARSEÆ DORSALIA ET LIGAMENTA BASII DORSALIA; THE DORSAL LIGAMENTS OF THE TARSUS, THE DORSAL TARSO-METATARSAL LIGAMENTS, AND THE DORSAL PROXIMAL INTERMETATARSAL LIGAMENTS. (THE RIGHT TARSUS WITH THE ADJOINING PORTIONS OF THE TIBIA AND FIBULA AND OF THE METATARSUS; DORSO-EXTERNAL ASPECT.)

The joints are unopened except for the astragalocalcaneal, astragalonavicular, and naviculocuneiform articulations, which have been partly opened.

Articulationes pedis—The articulations of the foot.





<sup>1</sup> The strongest part of this ligament is situate external, and not superior, to the calcaneocuboid articulation; it would therefore be more appropriately named the *external calcaneocuboid* ligament.—Tr.

<sup>2</sup> In the English nomenclature these are regarded as two distinct ligaments, not, as by Toldt, as two parts of a single ligament.—Tr.

FIG. 484.—ARTICULATIONES TALOCRURALIS ET TALOCALCANEAE, THE ANKLE-JOINT AND THE ASTRAGALOCALCANEAL ARTICULATION; LIGAMENTUM MALLEOLI LATERALIS ANTERIUS, ANTERIOR INFERIOR TIBIOFIBULAR LIGAMENT. THE ANTERIOR AND MIDDLE BANDS OF THE EXTERNAL LATERAL LIGAMENT OF THE ANKLE-JOINT (LIGAMENTUM TALOFIBULARE ANTERIUS ET LIGAMENTUM CALCANEOFIBULARE): LIGAMENTA TALOCALCANEAE, LATERALE, \*ANTERIUS, ET INTEROSSEUM; THE EXTERNAL, \*ANTERIUS, AND INTEROSSEOUS ASTRAGALOCALCANEAL LIGAMENTS.—ARTICULATIONES INTERTARSEÆ ET TARSOMETATARSEÆ, THE INTERTARSAL AND TARSOMETATARSAL ARTICULATIONS; ARTICULATIONES INTERMETATARSEÆ, THE INTERMETATARSAL ARTICULATIONS: LIGAMENTA Tarsi DORSALIA, LIGAMENTA TARSOMETATARSEÆ DORSALIA, ET LIGAMENTA BASIUM DORSALIA, THE DEEPER DORSAL TARSAL AND TARSOMETATARSAL LIGAMENTS, AND THE DORSAL PROXIMAL INTERMETATARSAL LIGAMENTS. (THE RIGHT TARSUS, WITH THE ADJOINING PORTIONS OF THE TIBIA AND FIBULA AND OF THE METATARSAL BONES; DORSO-EXTERNAL ASPECT.)

The anterior ligament of the ankle-joint and the lateral portion of the capsule of the astragalocalcaneal articulation have been removed.

Articulationes pedis—The articulations of the foot.



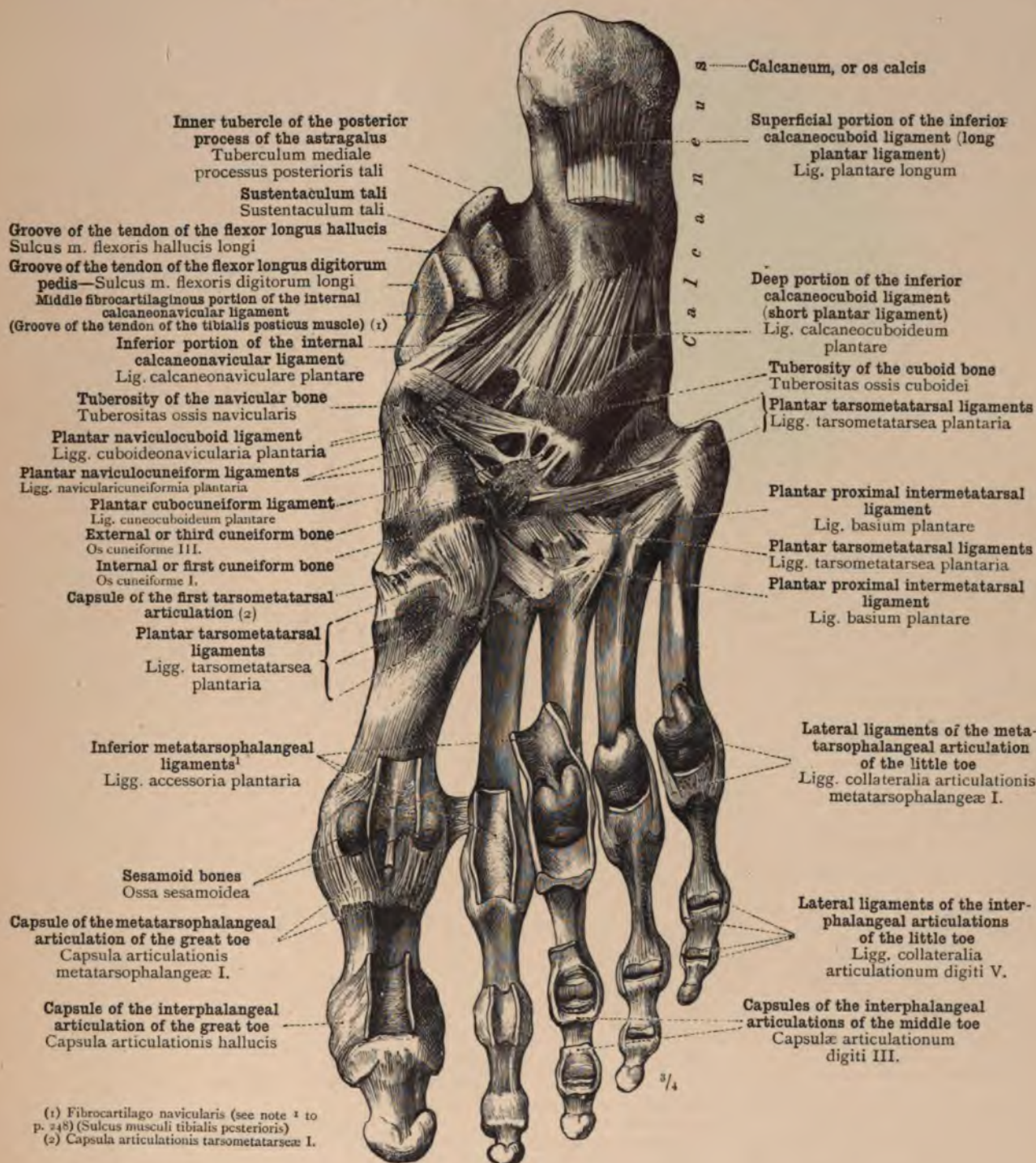


<sup>1</sup> Fibrous or sesamoid plate (Quain), or glenoid plate (Macalister) — Tr.

FIG. 485.—THE SUPERFICIAL LIGAMENTS OF THE PLANTAR SURFACE OF THE RIGHT FOOT AND THE RELATIONS OF THE TENDONS OF THE TIBIALIS ANTICUS AND POSTICUS AND OF THE PERONEUS LONGUS MUSCLES TO THESE LIGAMENTS. LIGAMENTA TARSII ET TARSOMETATARSEÆ, THE TARSAL AND THE TARSOMETATARSAL LIGAMENTS: LIGAMENTA BASIUM PLANTARIA, LIGAMENTA CAPITULORUM TRANSVERSA, ET LIGAMENTA ACCESSORIA PLANTARIA; THE PLANTAR PROXIMAL INTERMETATARSAL LIGAMENTS, THE TRANSVERSE METATARSAL LIGAMENT, AND THE INFERIOR METATARSOPHALANGEAL LIGAMENTS (see note above); THE RELATIONS OF THESE LIGAMENTS TO THE DIGITAL PROCESSES OF THE PLANTAR FASCIA.

Articulationes pedis—The articulations of the foot.





<sup>1</sup> See note to p. 246.

FIG. 486.—THE DEEP LIGAMENTS OF THE SOLE OF THE FOOT AND THE SESAMOID BONES OF THE METATARSOPHALANGEAL ARTICULATION OF THE GREAT TOE.

In the preparation shown in Fig. 485 the tendons of the muscles were removed, also the long plantar ligament except for its posterior extremity, and the transverse metatarsal ligament and the digital processes of the plantar fascia were cut away. Some of the metatarsophalangeal and interphalangeal articulations have been opened; others have been left intact.

Articulationes pedis—The articulations of the foot.



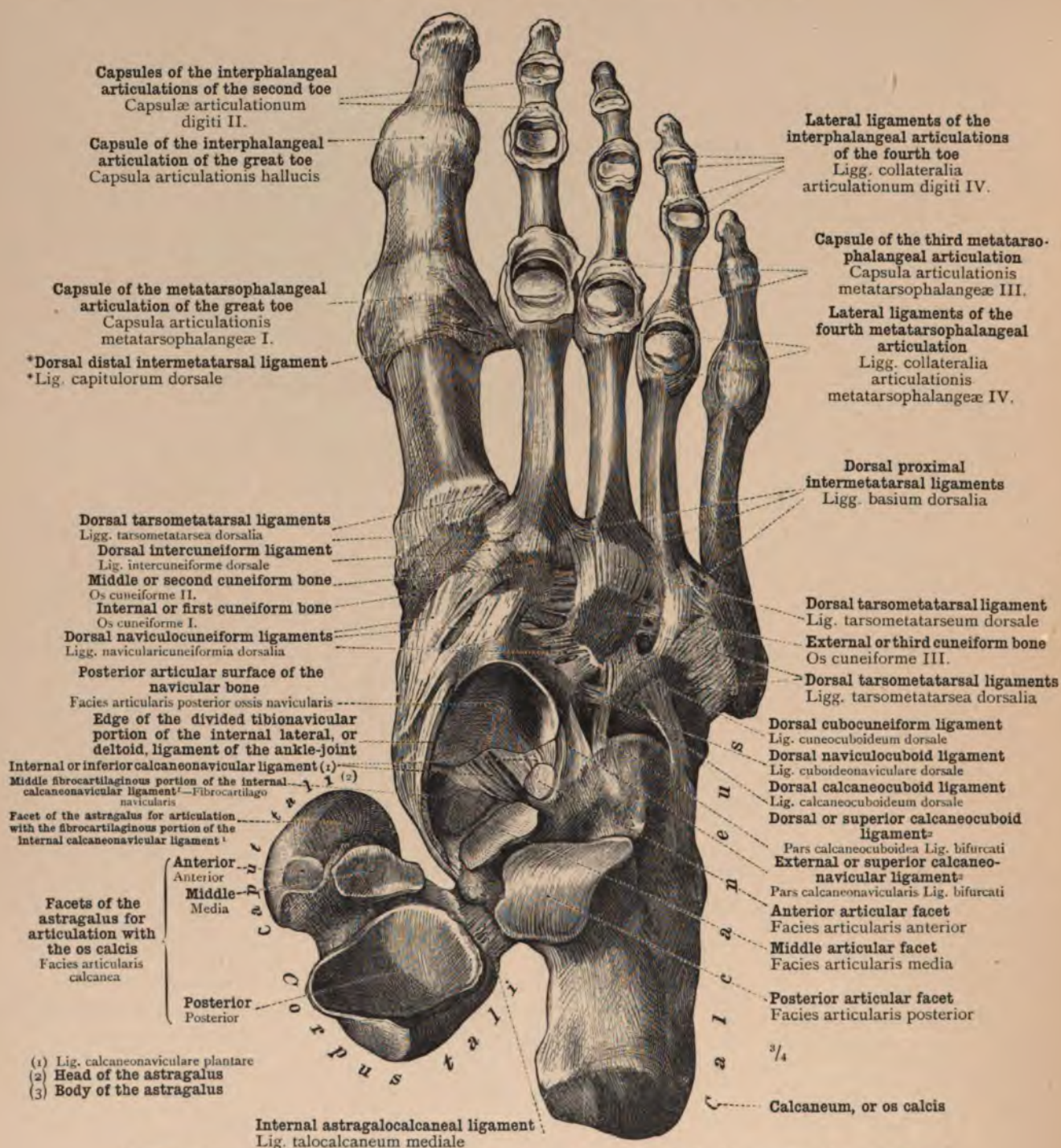
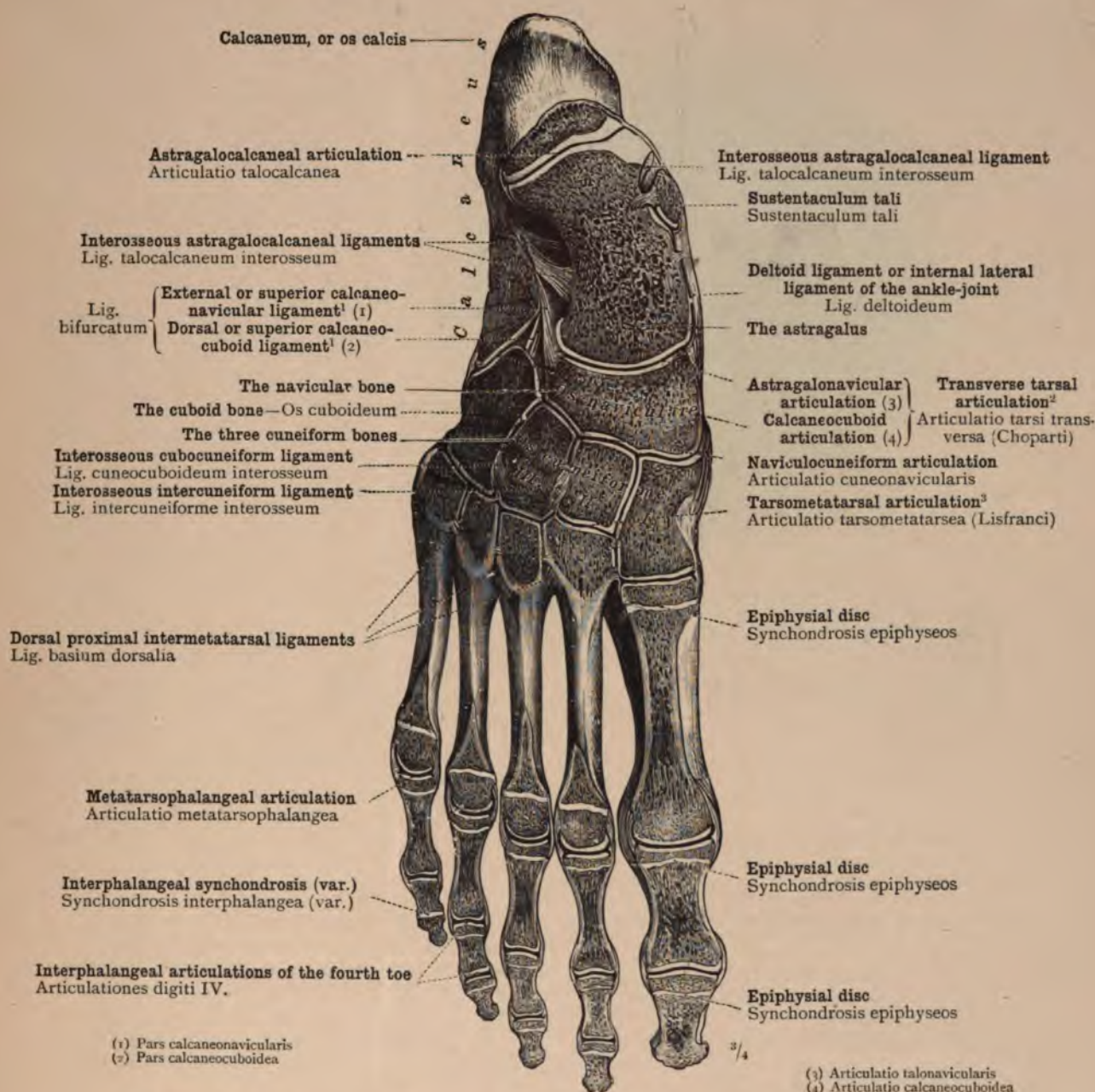


FIG. 487.—THE ARTICULAR SURFACES OF THE ASTRAGALOCALCANEONAVICULAR ARTICULATION, THE DEEP LIGAMENTS OF THE DORSUM OF THE FOOT, THE METATARSOPHALANGEAL AND INTERPHALANGEAL ARTICULATIONS OF THE TOES. (THE RIGHT FOOT SEEN FROM THE DORSAL SIDE.)

The capsule of the astragalocalcaneal articulation was removed, with the exception of the internal astragalocalcaneal ligament; the capsule of the astragalonavicular articulation was also removed with the exception of its internal and plantar walls; and, after removing the interosseous astragalocalcaneal ligament, the astragalus was rotated inwards (on the internal astragalocalcaneal ligament as a hinge), until its inferior surface looked directly upwards.

#### Articulationes pedis—The articulations of the foot.





<sup>1</sup> See note <sup>1</sup> to p. 245.

<sup>2</sup> Known also as the *midtarsal* or *mid-tarsal* joint. It is through this joint (the two parts of which are, however, entirely separate articulations) that the foot is divided in Chopart's amputation.

<sup>3</sup> It is through the tarsometatarsal articulations that the foot is divided in Lisfranc's amputation.

FIG. 483.—ARTICULATIONES INTERTARSEÆ ET TARSMETATARSEÆ, THE INTERTARSAL AND TARSMETATARSAL ARTICULATIONS, SHOWING CHOPART'S (MEDIOTARSAL) LINE, AND LISFRANC'S OR HEY'S TARSMETATARSAL LINE: LIGAMENTA TARSII INTEROSSEA ET LIGAMENTA CUNEO-METATARSEÆ INTEROSSEA, THE INTEROSSEOUS LIGAMENTS OF THE TARSUS, AND THE INTEROSSEOUS METATARSOCUNEIFORM LIGAMENTS. ARTICULATIONES INTERTARSEÆ, THE INTERTARSAL ARTICULATIONS. ARTICULATIONES METATARSOPHALANGEÆ, THE METATARSOPHALANGEAL ARTICULATIONS. ARTICULATIONES DIGITORUM PEDIS, THE INTERPHALANGEAL ARTICULATIONS OF THE TOES. THE RELATIONS OF THE EPIPHYSIAL DISCS OF THE METATARSAL BONES AND OF THE PHALANGES OF THE TOES TO THE RESPECTIVE ARTICULATIONS. (HORIZONTAL SECTION THROUGH THE ARTICULATIONS OF THE RIGHT FOOT OF A YOUTH AGED SEVENTEEN YEARS. SUPERIOR SURFACE OF THE LOWER SEGMENT.)



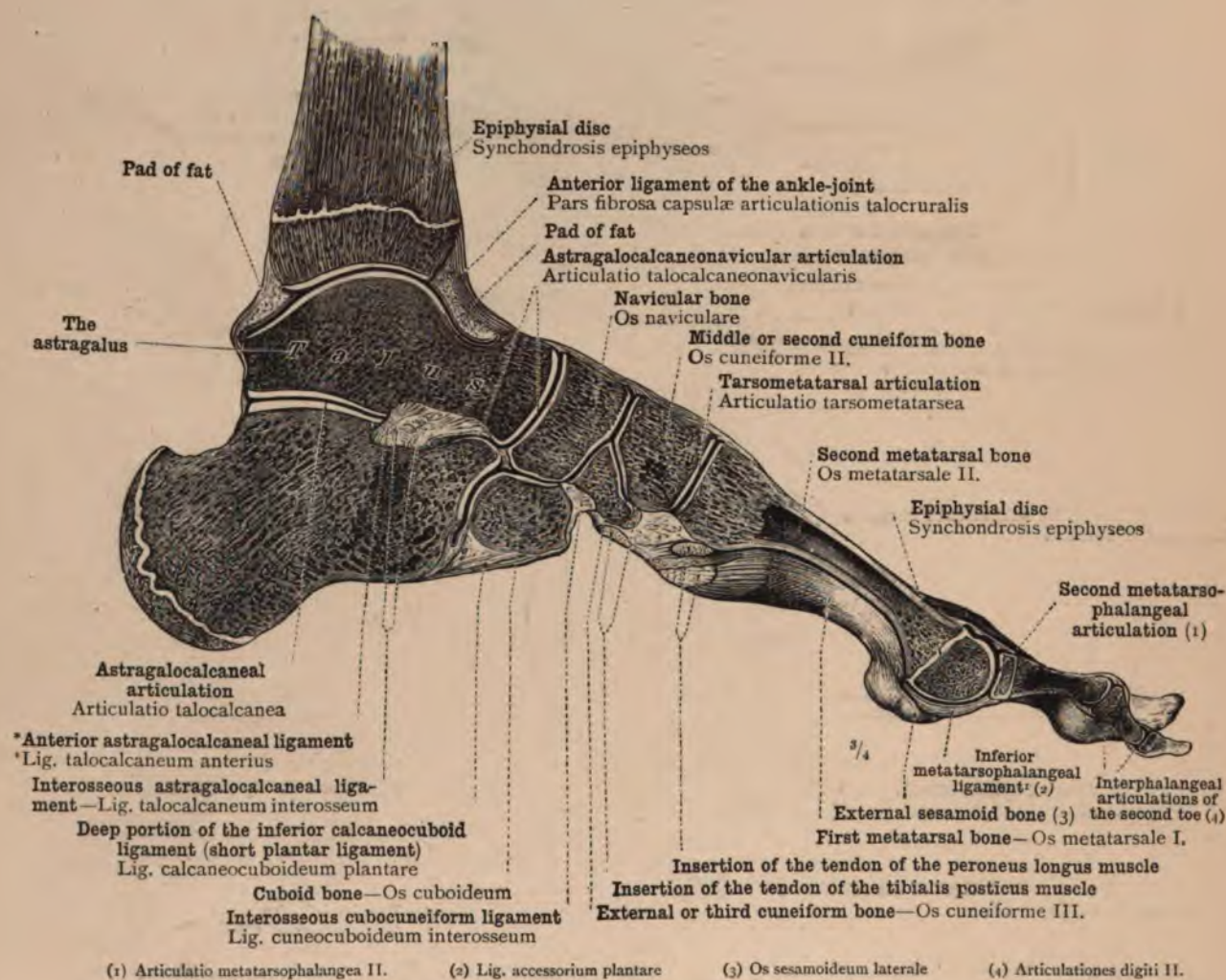


FIG. 489.—THE ARTICULATIONS OF THE RIGHT FOOT OF A YOUTH AGED SEVENTEEN YEARS, SEEN IN SAGITTAL SECTION, AND SHOWING THE RELATIONS OF THESE ARTICULATIONS TO THE EPIPHYSAL DISCS.

The section passes through the distal extremity of the tibia, the astragalus, the os calcis, the middle cuneiform bone, the second metatarsal bone, and the phalanges of the second toe.

Articulationes pedis—The articulations of the foot.



# INDEX TO THE ARTHROLOGY

Certain names in this Index have an asterisk (\*) prefixed; these, as more fully explained in the Translator's Preface, being terms that form part of the English nomenclature used in this work, but which are not commonly employed by English anatomists. To other names a dagger (†) is prefixed; these are Latin names used by the author in the original work, but not included in the official nomenclature of the "Anatomische Gesellschaft."

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